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AN OUTLINE

OF THE

HISTORY OF THE
WESTERN EUROPEAN MIND

BY

JAMES HARVEY ROBINSON

NEW SCHOOL FOR SOCIAL RESEARCH

FOURTH EDITION, REVISED

PRICE ONE DOLLAR NET

NEW YORK

1919



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No man hath propounded to himself the general state of learning to be described and represented from age to age, as many have done the works of nature, and the state civil and ecclesiastical; without which the history of the world seemeth to me to be as the statua of Polyphemus with his eye out.

Bacon, *Advancement of Learning*, Bk. II, i, 2.

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PREFATORY NOTE

This outline of Intellectual History is designed first and foremost to be used in connection with the course of lectures offered in this field to students in the New School for Social Research. Should it fall into the hands of others than those for whom it is primarily intended they should recollect that the selection and ordering of the historical facts which it contains may appear more arbitrary than they do when they are explained in class. At no very distant date the author hopes to complete a manual of which this preliminary outline is the harbinger.

The bibliographies demand a word of explanation. They are adapted to the specific purpose in hand—namely, to illustrate the general trend of knowledge and speculation among educated people in the past. They make no pretence to be adequate lists of works relating to the various fields of intensive scholarship upon which it is necessary to encroach, such as comparative and analytical psychology, anthropology, Greek philosophy, the history of the Jews, the origin of Christianity, Scholasticism, Humanism, the Protestant Revolt, or the development of the modern sciences. From the vast literature that exists upon each of these subjects those few works have been chosen, in consultation with experts in the respective fields, which give in a clear, compact and authentic form those large considerations with which the course deals.

The treatises relating specifically to the history of thought, at least in the sense in which it is here used, are few in number; and none of them attempts to follow the lines suggested in this outline. In addition to the histories of philosophy, literature and education, which have other aims than the present undertaking, there are the works of Andrew D. White, J. M. Robertson, J. B. Bury, Henry O. Taylor, W. E. H. Lecky, Leslie Stephen, A. W. Benn, J. T. Merz and others, covering portions of the field from special standpoints. These are cited in their appropriate places, but in general, as has been implied, the student who desires a re-

view of the whole subject must seek his materials where he can find them—they are not yet collected and digested for him in any convenient manual. An asterisk has been placed before those titles in the bibliographies which recommend themselves especially for the purposes of the course.

It has not been deemed necessary to refer in every instance to the valuable special articles to be found in encyclopaedias, the most useful of which, in addition to the eleventh edition of the *Encyclopaedia Britannica*, are the new edition of the *Encyclopedia Americana* (1918 sqq., in 30 vols.), *The New Schaff-Herzog Encyclopedia of Religious Knowledge* (1908 sqq., in 12 vols.) edited by S. M. Jackson and based upon the third edition of the *Realencyclopädie für protestantische Theologie* (1896-1909, 22 vols.); *The Catholic Encyclopedia* (1907 sqq., 16 vols.); *The Jewish Encyclopedia* (1901-06 in 12 vols.); *Encyclopedia of Religion and Ethics* edited by James Hastings (1908 sqq., in slow process of publication); the *Cyclopedia of Education*, edited by Paul Monroe (1910 sqq.); and *La Grande Encyclopédie* (31 vols., 1885-1903). The Columbia University Press is publishing a very valuable collection of historical sources, *Records of Civilization*, edited by Professor James T. Shotwell. Several volumes have already appeared. It is now the custom in the more scholarly encyclopaedias to furnish bibliographies, which are sometimes very excellent indeed. In this way and by means of the references in the works mentioned in the syllabus it will be possible for the more earnest and enterprising student to proceed as far as he has the patience to go in carrying out any particular line of study. It has not been thought worth while systematically to cite articles in periodicals, although now and then the more technical historical and philosophical journals make interesting contributions to the history of thought.

J. H. R.

NEW SCHOOL FOR SOCIAL RESEARCH,
OCTOBER, 1919.

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AN OUTLINE OF THE HISTORY OF THE WESTERN EUROPEAN MIND

FIRST DIVISION

PART I. THE BACKGROUND OF INTELLECTUAL HISTORY.

Section 1. Scope and Aims of Intellectual History.

SKETCH OF THE DEVELOPMENT OF HISTORY: epic, political, "sacred"; the "philosophy of history." How in the latter half of the nineteenth century History became scientific and truly historical in its aims and methods. General neglect of Intellectual History. Distinction between intellectual history and the history of philosophy, science, literature, or education.

MAN'S ABJECT DEPENDENCE ON THE PAST gives rise to the continuity of history. Our convictions, opinions, prejudices, intellectual tastes; our knowledge, our methods of learning and of applying our information we owe, with slight exceptions, to the past—often to a remote past. History is an expansion of memory, and like memory it alone can explain the present and in this lies its most unmistakable value. The passing of the term "pre-historic."

The article *"History: Its Rise and Development," *Encyclopedia Americana*, edition of 1918 (by H. E. Barnes), was prepared with the needs of this course especially in mind; the article *"History" in the *Encyclopedia Britannica*, 11th ed. (by J. T. Shotwell); *Robinson, J. H., *The New History*, especially essays I-IV.

There is no single comprehensive history of historical writing. A fair survey is provided in Bury, J. B., *The Ancient Greek Historians*; Hayes, C. J. H., *An Introduction to the Sources dealing with the Barbarian Invasions*; Balzani, Gairdner and Masson, *Early Chroniclers of Europe*; Fueter, E., *Histoire de l'historiographie moderne*; Gooch, G. P., *History and Historians in the Nineteenth Century*; and Flint, Robert, *The History of the Philosophy of History* (1894). Clear introductions to the modern scientific methods of historical research are to be found in George, H. B., *Historical Evidence*, and Langlois and Seignobos, *Introduction to the Study of History*. The most scientific and elaborate discussion of historical method is Bernheim, E., *Lehrbuch der historischen Methode* (6th edition, 1908). The long awaited translation of this work is now in preparation by E. E. Sperry.

Section 2. Man's uneducated Mind. The Unconscious.

EVOLUTIONARY BIOLOGY AND ANTHROPOLOGY IN THEIR RELATION TO INTELLECTUAL HISTORY. Two historical facts of supreme importance discovered in the latter half of the Nineteenth century: that man is descended from the lower animals and that he appears to have been sojourning on the earth for several hundred thousand years. Contrast between the implications of this view of man's origin and of that formerly held.

CONTRIBUTIONS OF COMPARATIVE AND ANALYTICAL PSYCHOLOGY TO INTELLECTUAL HISTORY. Two meanings of the word *mind*: the neurological basis; the cultural content. Reasons for assuming that we retain our animal *mind* along with our animal *body*. Importance of the new study of animal (comparative) psychology. Extraordinary educability of the Chimpanzee. How an ape learns: association, trick psychology, "trial and error"—all very human. Why the ape does not "ape." Man's large brain, superadded to his ape-like structure and temperament, enables him to imitate and to transmit acquired knowledge and habits, and so to accumulate civilization. Fundamental contrast between "nature" and "nurture" (culture), the first of which only is transmitted hereditarily. Problem of the hereditary transmission of acquired characters; the psychological elements involved. Hypothesis of a colony of really uneducated infants. Human *nature* constantly confused with what is really human *nurture*. Does intellectual history deal with nature or nurture or both?

THE UNCONSCIOUS. Recent discoveries and speculations rel-

ative to the nature and significance of the instinctive and unconscious elements in psychic life. The historical formation of the unconscious: our animal, primitive, human and infantile heritage—the forgotten and the habitual.

THE GREGARIOUS IMPULSE as the basis of social evolution and civilization. The “instinct of the herd.” Decisive role of childhood dependence in the transmission and conservation of culture.

*Crampton, H. E., *The Doctrine of Evolution, its Basis and its Scope* (1911), especially chaps. v-vi; *Geddes & Thompson, *Evolution* (Home University Library); *Drummond, H., *The Ascent of Man*, chaps. i-ii; Rignano, E., *The Inheritance of Acquired Characters* (1919); *Thorndike, E. L., *Animal Intelligence, Experimental Studies* (1911), especially chaps. i, iv, and vii; Watson, J. B., *Animal Education* (1903); and by the same, **Behavior; an Introduction to Comparative Psychology* (1914); Holmes, S. J., *The Evolution of Animal Intelligence* (1911); Washburn, M., *The Animal Mind* (1908), especially earlier chapters; James, Wm., *Psychology* (edition in 2 vols., 1895), chaps. xxii and xxiv, on reasoning and instinct. Woodworth, R. S., *Dynamic Psychology*, 1918 (Excellent introduction); Prince, Morton, *The Unconscious; the Fundamentals of Human Personality* (1914), an exposition by a leading non-Freudian; *Putnam, J. J., *Human Motives* (1917), a moderate statement of the more progressive views; *Lay, W., *Man's Unconscious Conflict* (1917), the clearest introduction to the Freudian concepts; White, W. A., *The Mechanisms of Character Formation* (1916), an authoritative survey with Freudian sympathies; *Trotter, W., *The Instincts of the Herd in Peace and War* (1916); Chapin, F. S., *Education and the Mores* (1911).

Darwin, Ch., *The Descent of Man*; Morgan, C. Lloyd, *Instinct and Experience* (1912); McDougall, W., *Social Psychology* (10th ed., 1916); by the same *Body and Mind* (2d ed., 1913); Tarde, G., *Laws of Imitation*; Hobhouse, *Mind in Evolution* (1901); Jung, C. G., *The Psychology of the Unconscious* (1916); and by the same, *Analytical Psychology* (1917); Brill, A. A., *Psychanalysis* (1914).

Section 3. The Antiquity of Man.

NATURE OF THE EVIDENCE BEARING ON MAN'S ANTIQUITY. The two chief sources of information for the reconstruction of the early history of the race: physical remains studied by comparative anatomists, and cultural relics described by archeologists. Discoveries of Boucher de Perthes, 1805ff. Lyell's *Antiquity of Man*, published in 1863.

PHYSICAL REMAINS OF MAN: Pithecanthropus Erectus discovered in Java in 1892; the Heidelberg Man discovered in 1907; the Piltown Man discovered in Sussex in 1911; the many discoveries of the Neanderthal type since the original find in Westphalia in 1856. Somatological evidence of mental evolution revealed in this series of skeletal remains.

PREHISTORIC ARCHEOLOGY AND INTELLECTUAL HISTORY. C. J. Thomsen, Gabriel de Mortillet and the development of a scientific classification of early cultural eras. The basis of this classification. "Eoliths." The fist hatchet the first well developed human utensil. Paleolithic eras. Great influence in the development of culture attributed to the movements of the ice sheet. Paleolithic art. Ground stone tools of the Neolithic period. The continuity of invention illustrated by bronze celts. Vast progress implied by the advance to the Neolithic or agricultural stage. Survival of paleolithic civilizations among the recently extinct Tasmanians and other backward peoples. Nature of primitive intellectual life can be deduced from archeological survivals and from the study of contemporaneous savages.

*Breasted, J. H., *Ancient Times* (1916), chap. i, the best introduction; *Marett, R. R., *Anthropology* (1911), chap. ii, an animated and interesting introduction; Haddon, A. C., *History of Anthropology* (1910), chaps. iii-iv, viii; Chapin, F. S., *An Introduction to Social Evolution* (1914), an elementary but none too accurate introduction to the study of primitive man; Elliot, G. F. S., *Prehistoric Man and His Story* (1915), a readable and fairly reliable survey of the whole "prehistoric" period; *Hrdlicka, A., *The Most Ancient Skeletal Remains of Man*, Smithsonian Report (1913), an excellent resumé of the subject; *Duckworth, W. L. H., *Prehistoric Man* (1912), a brief sketch by an eminent comparative anatomist; Keith, A., *The Antiquity of Man* (1915), from the anatomical standpoint; Sollas, W. J., *Ancient Hunters* (1915), a standard work especially strong on the geological side; *Osborn, H. F., *Men of the Old Stone Age* (1915), the most comprehensive survey of the paleolithic period in both the physical and cultural fields, admirably illustrated; *Marvin, F. S., *The Living Past*, chap. ii; and edited by the same, *Progress and History*, chap. ii; *Jones, F. Woods, *Arboreal Man*.

Lyell, Ch., *Antiquity of Man* (1863); Avebury, *Prehistoric Times* (7th ed. 1913); Peet, T. E., *The Stone and Bronze Ages in Italy and Sicily* (1909); Munro, R., *The Lake Dwellings of Europe* (1890); and by the

same, *Paleolithic Man and Terramara Settlements in Europe* (1912); Obermaier, H., *Der Mensch der Vorzeit* (1912); Mortillet, de G. et A., *La Préhistoire*; Déchelette, J., *Manuel d'archéologie préhistorique*.

Section 4. Primitive Reasoning of Man: General Perspective of Intellectual Development.

TECHNOLOGY AND INTELLECTUAL HISTORY. The cultural mind viewed as the product of a long and hazardous process of accumulation. The relation of the progress of the industrial arts to intellectual history. The history of practical invention as illustrated by the discovery and use of fire.

THE MENTAL LIFE OF PRIMITIVE MAN. Development of language; reflections on the rôle of language. Spontaneous generation of superstition. Prevalence of symbolism, mana, animism, magic, fetishism, totemism; the taboo (cf. our modern idea of "principle"), the sacred, clean and unclean; "dream logic,"—spontaneous rationalizing or "jumping at conclusions;" belief in the soul and a life beyond the grave. These all perendure as elements in even highly developed later religious systems and in ancient and mediaeval science.

GENERAL PERSPECTIVE OF THE HISTORY OF THE HUMAN MIND illustrated by a cloak dial on which each of the twelve hours represents 20,000 years. What we call "civilization" a recent and hitherto precarious addition to the older attainments of mankind. Question of racial differences in mental capacity. (For the periods of intellectual development see below, section 29, page 35).

Haddon, A. C., *History of Anthropology* (1910), chap. ix; *Tylor, E. B., *Anthropology* (1881), chaps. viii-xi, by far the best introduction to primitive technology; and by the same, *Researches into the Early History of Mankind*; Mason, O. T., *The Origins of Inventions* (1895); and by the same, *Woman's Share in Primitive Culture* (1895); Dawkins, W. B., *Early Man in Britain* (1880); Veblen, Thorstein, *The Instinct of Workmanship* (1915), the standard discussion of the relation of the industrial arts to the psychological development of man; *Gowland, W., "The Metals in Antiquity," in *Journal of the Royal Anthropological Institute*, Vol. XLII (1912), pp. 235-87; *Roth, H. L., "Studies in Primitive Looms," *Ibid.*, Vol. XLVI (1916), pp. 284-309.

*Boas, Franz, *The Mind of Primitive Man* (1911), especially chaps. i-v and the summary, pp. 244-250, calculated to dispel many venerable illusions; by the same author, *Introduction to Handbook of American Indian Languages* (Bureau of Ethnology, 1910), and discussion of language in Payne, *History of the New World called America*, Vol. II, pp. 88 *sqq.*; Carpenter, J. E., *Comparative Religion* (Home University Library); *Thomas, Wm. I., *Source Book for Social Origins*, pp. 1-26, 143-186, 426-435, part III and part VI, on Magic, Animism, etc.; *Shotwell, J. T., *The Religious Revolution of Today* (1913), particularly chap. iii; *Marett, R. R., *Anthropology*, chaps. v-x; by the same, *The Threshold of Religion* (1914); *Sumner, W. G., *Folkways* (1907); Haddon, A. C., *Evolution in Art* (1895); by the same, *Magic and Fetishism* (1906); Leuba, J. H., *A Psychological Study of Religion* (1912); *Lowie, R. H., *Culture and Ethnology* (1917), especially chap. i; and by the same, *Primitive Society* (1919); Santayana, G., *The Life of Reason*, Vol. I; Gilmore, G. W., *Animism* (1919).

Tylor, E. B., *Primitive Culture*, 2 vols.; Westermarck, *Origin and Development of Moral Ideas* (2 vols., 1906-8); Hobhouse, *Morals in Evolution*, new ed., 1915; Durkheim, E., *The Elementary Forms of Religious Life* (1915); Silberer, H., *The Problems of Mysticism and Its Symbolism*; Levy-Bruhl, L., *Les fonctions mentales dans les sociétés inférieures* (1910); Goldenweiser, A. A., *Totemism, An Analytical Study* (1910); Hahn, E., *Die Entstehung der wirtschaftlichen Arbeit* (1908).

PART II. HELLENISM AND ITS TRANSMISSION TO THE ROMAN EMPIRE.

Section 5. Intellectual Debt of Europe to Egypt and Assyria.

THE ORIENTAL HERITAGE OF THE GREEKS. The Greeks wrote the first books (with the exception of portions of the Old Testament) destined to form a part of the intellectual heritage of Western Europe. Unsolved problem of what the Greeks owed to the Egyptians and to the eastern Mediterranean countries. The Egyptians the first, so far as is known, to invent writing. The origin of the alphabet. Character of the slight remains of early Egyptian literature. Interest mainly practical, *e. g.*, care of the body in this world and of the soul in the next. Egyptian origin of Alchemy. The development of the industrial arts. From Assyria came astrology and our divisions of the circle and of the day. The library of Assurbanipal (668-626); Assyrian classicism. Newly discovered Aegean civilization.

*Beasted, J. H., *Ancient Times*, much the best introduction; and by the same, *Development of Religion and Thought in Ancient Egypt* (1912); and also "The Place of the Near Orient in the Career of Man," in the *Journal of the American Oriental Society*, Volume 39 (1919); Erman, A., *Life in Ancient Egypt* (1894); Jastrow, M., *Civilization of Babylonia and Assyria* (1915); *Sedgwick, W. T., and Tyler, H. W., *A Short History of Science* (1917), chap. ii; Hawes, C. H. and H. B., *Crete, the Forerunner of Greece* (1911); Hogarth, D. G., *Ionian and the East* (1909); *Rogers, R. W., *Religion of Babylonia and Assyria, especially in its relations to Israel* (1908); *Marvin, F. S., *The Living Past*, chap. iii; Webster, H., *Rest Days* (1916); *Seignobos, C., *History of Ancient Civilization*, chaps. iii-viii.

Meyer, E., *Geschichte des Altertums*, new ed., 1907, *sqq.*; Cantor, *Vorlesungen über Geschichte der Mathematik*, parts I-II, pp. 17-104; Dussaud, R., *Les Civilisations préhelléniques*, 1910.

Section 6. The Beginnings of Philosophic Speculation among the Greeks.

THE HELLENIC ORIGINS OF FREE THOUGHT AND PHILOSOPHICAL SPECULATION. The intellectual life, strictly speaking, appears to have first begun on a considerable scale in the Ionian towns and in their colonies in southern Italy and Sicily (700-500 B.C.).

PRE-SOCRATIC THOUGHT. Thales of Miletus. Search for the material principle of all things culminated in the theory of the four elements of Empedocles (fl. circa 450 B.C.) which was later sanctioned by Aristotle. The Eleatic philosophers—Xenophanes (fl. circa 530 B.C.), Parmenides (fl. circa 495)—their confidence in metaphysical reasoning, their paradoxes and unchanging world. Pythagorean enthusiasm for explanatory value of numbers and proportion. Leucippus (fl. circa 440 B.C.) and Democritus (fl. 410 B.C.) advance the mechanistic theory of atoms. Heraclitus (fl. circa 510 B.C.) and the question of “flux.”

HISTORIC BACKGROUND OF THE INTELLECTUAL HEGEMONY OF ATHENS. Destruction of Miletus in 494. (A generation earlier the Hebrews had returned from the exile and were developing the literature which was destined to be included in the Old Testament.) After the repulse of Xerxes (Marathon, 490; Thermopolae and Salamis, 480) Athens becomes the center of an incomparable intellectual life for a century and a half.

*Sedgwick and Tyler, op. cit. chap. iii; Short accounts of the early Greek thinkers will be found in *Marshall, John, *A Short History of Greek Philosophy*; *Benn, A. W., *History of Ancient Philosophy* (1912); and by the same, *Early Greek Philosophy* (1908); Burnet, J., *Greek Philosophy*, Vol. I, 1914, Thales to Plato; Windelband, W., *Ancient Philosophy*; Zeller, E., *Outlines of the History of Greek Philosophy*, and in Croiset, A., *Histoire de la Littérature grecque*, Vol. II, pp. 471-535. Extracts from Pre-Socratic philosophy in *Bakewell, C. M., *Source Book in Ancient Philosophy*, pp. 1-66.

Fuller treatments may be found in Gomperz, T., *Greek Thinkers*, Vol. I; Burnet, John, *Early Greek Philosophy*, and Zeller, *History of Greek Philosophy from the earliest period to Socrates*, 2 vols.; Berthelot, R., *Evolutionisme et Platonisme* (1908) pt. III.

Section 7. The Sophists. Socrates and Plato.

THE SOPHISTS. Appearance of a class of professional teachers, Sophists, in Athens, who bring philosophy down to earth. Their character and the reasons for their bad reputation. Attitude of Euripides.

SOCRATES (470-399): Our impressions of Socrates (who wrote nothing) largely due to Xenophon and Plato. So-

crates early alienated from natural science; his exclusive reliance upon discussion (dialectic).

PLATO (427-347): Nature and variety of his *Dialogues*. Importance of the indecisive character of the discussions. Free play of reason; Plato has no "authorities" in later sense of term, and gives only a subordinate place to the supernatural. Theory of ideas the basis of later Platonism. Contempt for the changing, the dynamic and the commonplace. Two tendencies in Plato which become distinct later: (a) his skeptical method approved by the Academy in succeeding centuries; (b) his mystic tendencies—as shown in the *Timaeus* (the only dialogue to be had in Latin in the Middle Ages) and in a sequel to the "Laws," the *Epinomis*—became the basis of Neoplatonism, which abjured reason.

*Murray, Gilbert, *Ancient Greek Literature*, chaps. vii and xiv; by same writer, *Euripides and his Age* (Home University Library); *Croiset, *An Abridged History of Greek Literature*, chap. xix (Attic philosophy from Xenophon to Aristotle); Burnet, *Greek Philosophy*, Vol. I. Shorter accounts will be found in the manuals of Marshall, Windelband, and Zeller, mentioned under section 6; Grote, G., *History of Greece*, chap. lxvii contains a celebrated defense of the Sophists; *Croiset, *Histoire de la littérature grecque*, Vol. IV, pp. 38-68 (Sophists). Of Plato's dialogues the best worth reading are perhaps *The Republic* (especially books i-ii and the opening of iii and books vii and ix); *The Apology*, *Crito*, and *Phaedo* (which relate to the trial, last hours, and death of Socrates); *The Banquet* or *Symposium*, deemed Plato's finest literary work; *Protagoras*, showing up charmingly the chief Sophists; the *Theaetetus* which deals with the nature of knowledge; and the *Timaeus* (see Jowett's interesting introduction) which exhibits the mysticism that appealed to Plato's mediaeval admirers. Xenophon's *Memorabilia* or *Recollections of Socrates*, together with several of Plato's most important dialogues, are to be found in "Everyman's Library" in two inexpensive volumes; important extracts are given in Bakewell, *Source Book*.

Fuller treatments of Socrates and Plato will be found in Gomperz, *Greek Thinkers*, Vols. II-III; Croiset, *Histoire de la Littérature grecque*, Vol. IV, pp. 200-385. Zeller has a volume on *Socrates and the Socratic Schools* and another on *Plato and the older Academy*.

Section 8. Aristotle and his Supreme Place in the History of European Thought.

ARISTOTLE (384-322): How Aristotle codified Greek learning and added much of his own. Romantic story of his manu-

scripts. Their encyclopaedic range. Fourfold character of Aristotle's interests, philosophical, scientific, scholarly, and ethical. His habit of presenting his material in the form of systematic treatises. His theory of essence and the four "causes," material, formal, efficient, and final. The four elements, earth, water, air, and fire. (Not successfully combatted until the time of Boyle (1627-1691)). The perfection of the heavens and his conception of God as the "prime mover." Theory of motion and of light and heavy. Virtue a happy mean; highmindedness; the ideal contemplative life; Aristotle's reason-loving God. The problem of the Aristotelian teleology. Sources of Aristotle's enduring influence. He opens the era of "la science livresque."

The most available of Aristotle's works are his **Politics* (especially Book I and opening of Book II) and his **Ethics* (for example, Book II, chaps. vi-ix; Book IV, chaps. vii-viii, and Book X). The works of Aristotle are now being translated into English and published by the Clarendon Press, Oxford. The *Metaphysics*, 1908, the *Historia Animalium*, 1910, the *Politics*, and some of the lesser works have appeared. There are good translations of the *De Anima*. Important extracts may be found in Bakewell, *Source Book*. For general range of interests among the Greeks see *Hellenic Civilization*, by Professors Botsford and Sihler in "Records of Civilization," Columbia University Press, 1915; and Botsford, *Hellenic History* (in preparation).

In addition to the manuals mentioned in section 6 above, see Wallace, *Outlines of the Philosophy of Aristotle*; Taylor, A. E., *Aristotle* (an admirable little book); Lones, T. E., *Aristotle's Researches in Natural Science*, 1912; Grote, *Aristotle*; Zeller, *Aristotle and the Peripatetics*; and, especially interesting, *Croiset, *Histoire de la littérature grecque*, Vol. IV, pp. 675 *sqq.*

Section 9. Four Main Schools of Greek Thought: Stoics and Epicureans.

POST-ARISTOTELIAN THOUGHT IN GREECE. Four main schools of thought traced their origin to the rather vague and uncertain teachings of Socrates: (a) Plato and the Academy; (b) Aristotle and the Peripatetics; (c) Diogenes (pupil of Antisthenes) and the Cynics; (d) Aristippus and the Cyrenaics. Discipleship, classicism and the freedom of thought in Ancient Athens.

ZENO, THE STOIC, shortly after Aristotle's death, revises the tenets of the Cynics and is regarded as the founder of Stoicism. Hymn of his co-worker, Cleanthes. Stoic conception of God (Providentia) and of our essential freedom through reason; "Indifferent," things alone out of our control. Argument from design; duty of praising God in his works. Natural law and the brotherhood of man. Books of Greek Stoics lost but their views to be found in the writers of the Roman period, in Cicero's *Nature of the Gods*, Seneca, Epictetus, and Marcus Aurelius. God and the gods, no clear monotheistic issue in the classical period.

EPICURUS (b. 341), a contemporary of Zeno, combined doctrines of the Cyrenaics with the atomic theory of Democritus. Mechanistic theory of the universe. The Epicureans hoped to free men's minds from needless anxiety in regard to the gods and death. Virtue, happiness and pleasure. The Roman poet Lucretius (d. about 55 B.C.) set forth atomic theory and Epicurean doctrines. His horror of "religio" (*Tantum religio potuit suadere malorum*). All things are due to natural causes, nothing to supernatural intervention.

STOIC AND EPICUREAN COSMOLOGY. Contrast between the cosmic philosophy of the Stoics and Epicureans: The personal as over against the impersonal conception of the order of nature.

In addition to the manuals mentioned under section 6, Zeller, *Stoics, Epicureans and Skeptics*; Murray, Gilbert, *The Stoic Philosophy* (1915); Masson, J., *Lucretius, Epicurean and Poet* (1907); *Croiset, *Histoire de la Littérature grecque*, V, chap. ii, excellent; Moore, C. H., *The Religious Thought of the Greeks*. For the Stoics, Seneca, *On Benefits*; Epictetus, *Golden Sayings*, selected by Crossley in Golden Treasury series; Complete translation of *Discourses* of Epictetus by Long in Bohn Library; Marcus Aurelius, *Thoughts*, many editions. Hicks, *Stoic and Epicurean*; For the letters of Epicurus (very important) see Diogenes Laertius, *Lives and Opinions of Eminent Philosophers* (written probably early in the third century A.D.) or extracts given by Bakewell in his *Source Book*. Second only in importance to the words of Epicurus are those of his admirer Lucretius in his poem on "The Nature of Things," translated by Munro and in a more spirited manner by Bailey (Clarendon Press).

On the history of cosmology see., Troels-Lund, F., *Himmelsbild und Weltanschauung im Wandel der Zeiten* (1899); and the monumental work of Duhem, P., *Le système du Monde*, 5 vols.

Section 10. Transfer of Intellectual Hegemony to Alexandria: Hellenistic Period.

CHARACTER OF LATER GREEK THOUGHT. Preoccupation with lofty generalization. Failure to standardize sensation through invention of scientific instruments.

ALEXANDRIA AND HELLENISTIC SCIENCE. Hellenizing of Alexander's empire. Alexandria (founded 332 B.C.) becomes center of intellectual activity. Its "Museum" and great libraries. Books of period nearly all lost. Variety of scientific interest illustrated by Euclid (d. about 300); Aristarchus and his discovery of the rotation of the earth; Eratosthenes (about 275-195) and his encyclopaedic interests; Apollonius (circa 250-200) and conic sections; Archimedes (287-212) and his attitude toward applied science, and Hipparchus (d. about 130), the founder of trigonometry. Strabo (fl. circa 50 B.C.) and ancient geography. Geographical and astronomical ideas of the period transmitted by Ptolemy (2d cent. A.D.). Treatises on mechanical devices by Hero of Alexandria (fl. circa 100 B. C. or later). Range of mechanical inventions of Greeks and Romans. Unfulfilled promise of Hellenistic science. Influence of slavery in checking the development of science. Relation of scientific and mechanical stagnation to the decline of Greek civilization.

*Sedgwick and Tyler, chaps. iv-vi; Gow, James, *A Short History of Greek Mathematics* (1884); Ball, W. W. R., *Short Account of the History of Mathematics* (3d ed., 1901), chaps. i-iv; Cajori, F., *A History of Mathematics* (1919); Tozer, H. F., *History of Ancient Geography* (1897); Crciset, *Histoire de la Littérature grecque*, Vol. V, chap. i; Mahaffy, J. P., *Greek Life and Thought from the death of Alexander to the Roman Conquest* (disappointing for our purpose, in spite of promising title); Snyder, Karl, *The World Machine* (marvelously enthusiastic but highly uncritical). There appears to be no satisfactory summary of the general intellectual history of this period in English, but some good chapters may be found in Holm, *History of Greece*, Vol. IV.

The standard treatment of Hellenistic literature is Susemihl, Fr. *Geschichte der Griechischen Litteratur in der Alexandrinerzeit* (2 vols., 1891-2). There is an admirable account in Christ, W., *Geschichte der griechischen Litteratur* (5th ed., 1911), Vol. II, pp. 190-228; Cantor, M., *Vorlesungen über Geschichte der Mathematik* (1894), sec. iii, pp. 105-182, would appear to be well nigh exhaustive; Dannemann, F., *Die Naturweis-*

senschaften, in ihrer Entwicklung, 1910, I, 118 sqq.; Gerland und Trau-müller, *Geschichte der Physikalische Experimentierkunst*, 1899.

Section 11. How Hellenism was transmitted to the Romans: Cicero.

THE ROMAN ADAPTATION OF HELLENIC CULTURE. After the Third Samnite war the Romans annex the cities of Magna Graecia (290-272) and later (212) Syracuse. Development of Roman literature and thought stimulated by Hellenism. Long history of the Latin language from Naevius (d. about 200) to the present day. Ennius (239-170). Plautus (d. about 184) and Terence (d. about 159) adapt Greek comedies to Roman demands. Cato the Censor (about 232-147), first Latin prose writer, protests in vain against Greek influences.

CICERO (106-43) AND HIS IMPORTANCE IN THE HISTORY OF THOUGHT. His early studies in Athens, Rhodes, and elsewhere. Delighted in freedom from dogmatism. *Nos qui sequimur probabilia et refellere sine pertinacia et refelli sine iracundia parati sumus.* His method of using Greek books as a basis for his philosophical treatises. His dialogue *On the Nature of the Gods* an admirable illustration of the various schools of thought of his time.

CICERO'S CONTEMPORARIES AND SUCCESSORS. Lucretius and Varro (116-27), the encyclopaedic writer. "Golden" age of Augustus (d. 14 A.D.), Virgil, Horace, Ovid, Livy.

Duff, J. D., *A Literary History of Rome* (1909), pp. 18-38, 92-117 and 349-397; Mackail, J. W., *Latin Literature*, chaps. i-iii, vi. Reid in his introduction to his edition of Cicero's *Academica* gives an excellent account of Cicero's attitude toward Greek learning; Sihler, E. G., *Cicero of Arpinum* (1915).

Section 12. Decline and Disappearance of Hellenism in Western Europe.

DECLINE OF HELLENISM. The Hellenic intellectual and literary impetus begins sensibly to flag after the "Golden" age of Augustus. The "Silver" age scarcely holds its own; followed by the steady and definite decline of Hellenism in the west.

The elder Pliny (d. 79 A.D.) ; his *Natural History*, a vast and indiscriminate compilation. The circle of the amiable younger Pliny, about the year 100:—Tacitus, Suetonius, Martial, Quintilian; Juvenal (d. about 140). Age of the Antonines (138-180) of which one can form some notion from the Attic Nights of Aulus Gellius.

SYMPTOMS OF INTELLECTUAL DECADENCE. Learning had long been largely reminiscent. Archaistic tendency; affectation and intricacy of literary style. Predominating study of rhetoric. Greek still current among the learned. The belated Lucian (d. about 200) and his witty dialogues. After this time only a few scattering examples of the older Hellenic ambitions.

THE ORIGIN OF THE SEVEN LIBERAL ARTS. Martianus Capella, probably in Constantine's time (circa 325), furnishes in his *Marriage of Mercury and Philology* ("a sterile union of fantasy with pedantry"), a text book of the Seven Liberal Arts, which admirably illustrates the bad taste, degenerate style and dry epitomizing which overtook the ancient learning.

FUNDAMENTAL WEAKNESS OF HELLENIC LEARNING. It was an imposing collection of speculations, opinions, and guesses, which, however brilliant and ingenious they might be, were based on a very slight body of exact knowledge, and failed to recognize the fundamental necessity of painful scientific research, aided by apparatus. There was no steady accumulation of knowledge to offset the growing emotional distrust of reason. The game was played out, and the ancient knowledge which did not find its ways into the arid and unintelligent epitomes of the time, was doomed. Vain efforts of Boethius (about 475-525) to transmit to posterity Latin translations of some of the chief Greek authors. Knowledge of Greek practically lost in Western Europe for nearly a thousand years. An emotional and consequent intellectual revolution had been in progress in the Roman Empire, which not only serves to explain the intellectual life of the Middle Ages but that of modern times.

*Pliny the Younger, *Letters*, translated by Firth (Camelot Series); Dill, S., *Roman Society from Nero to Marcus Aurelius*, Bk. II, chap. i ("Circle of Younger Pliny"); Mackail, *Latin Literature*, part III, chaps. iv-v; Aulus

Gellius, *Attic Nights*; *Glover, T. W., *Conflict of Religions in the early Roman Empire*, chap. vii; *Hatch, E., *Influence of Greek Thought and Usages on the Christian Church*, chap. ii (Greek Education); Selections from Lucian, translated by E. J. Smith; Walden, J. W. H., *Universities of Ancient Greece* (relates chiefly to this period); *Taylor, H. O., *Classical Heritage of the Middle Ages*, pp. 18-56; Glover, T. W., *Life and Letters in the Fourth Century*; Dill, *Roman Society in the Last Century of the Empire*, Bk. V (characteristics of Roman Education and Culture in the Fifth century).

PART III. FORMATION IN THE LATER ROMAN EMPIRE OF THE INTELLECTUAL HERITAGE OF THE MIDDLE AGES.

Section 13. How Christian Literature Largely Sup- planted that of Greece and Rome.

ORIGIN AND NATURE OF EARLY CHRISTIAN LITERATURE. The new Christian literature confined to religious exhortation, biblical exegesis, controversy, and "sacred" history. Earliest Christian works were in Greek; Apology of Minucius Felix (end of 2d century) first example of a Christian work in Latin. Tertullian (d. about 230) first voluminous Latin writer. Cyprian (d. 258). Great expansion of Christian literature after Constantine's accession; Eusebius and his *Ecclesiastical History*; Sozomen, Socrates, and Orosius establish new standards of historiography. Athanasius (d. 375), Basil (d. 379), and Chrysostom (d. 407) write in Greek. Chief Latin "fathers" of this period, Ambrose (d. 373), Jerome (d. 420), and, above all, Augustine (d. 430).

The origin and character of the intellectual activity of the patristic period will be the subject of the succeeding sections and references will be given in connection with each topic. For the general development of Christian literature see short account in Mackail, *Latin Literature*, part iii, chap. vi; Kruger, G., *History of Early Christian Literature* (1897); Bardenhewer, O., *Patrology* (1908); and excellent extensive treatment in Ebert, A., *Litteratur des Mittelalters*, Vol. I; and Harnack, A., *Geschichte der altchristlichen Litteratur*. On the early Christian historiography see Hayes, C. J. H., *Introduction to the Sources Relating to the Germanic Invasions* (1909); a translation of Orosius is in preparation by C. J. Ogden.

Section 14. "The Christian Epic": Syncretism: The Place of Religion in the History of the Intellectual Class.

"THE CHRISTIAN EPIC," as summarized by Santayana. Whence came the Church with its conception of "two cities," its revelation dominating reason, its ideas of sin and salvation, of

the resurrection and last judgment, of heaven and hell, angels and devils, miracles, martyrs and monks, its mysticism and sacraments, and its power to make disbelief a crime in the eyes of the State?

CHRISTIANITY IN THE LIGHT OF INTELLECTUAL HISTORY. Habit of Christian apologists to contrast Christianity, pure and undefiled, with an unspeakable "paganism" or idol worship. Historical "Christianity" now appears to the modern student of comparative religion to have been the highly complex result of a long development, and to resemble in certain important respects a number of world religions—Stoicism, Hellenistic paganism, Neoplatonism, Mithraism, Manichaeism, Judaism (all of which carried over with them more primitive elements)—with which it found itself in rivalry during the early centuries of its existence. Religious "*syncretism*," a process of unconscious borrowing and lending. A new religious system is always deeply affected by the prevailing conditions and always carries over much that is old.

PHASES OF THE RELIGIOUS COMPLEX. "Religious" a vague and comprehensive term applied to: (1) Certain classes of emotions (awe, dependence, self-distrust, aspiration, etc.); (2) Conduct, which may take the form of distinctive religious acts (ceremonies, sacrifices, prayers, "good works") or the observance of what in primitive conditions are recognized as "taboos"; (3) Priestly or ecclesiastical organizations; (4) Beliefs about supernatural beings and man's relations to them: the latter may take the form of revelation and be reduced to creeds and become the subject of elaborate theological speculations. Association of religion with the supernatural: religion has always had for its primary object the attainment of a satisfactory adjustment to, or a successful control over, the supernatural.

CHRISTIANITY AND THE WESTERN EUROPEAN MIND. The highly organized Christian Church with its revelations, its creeds, and vast system of theology has exercised an incalculable influence on the development of thought and science in Western Europe from the days of Augustine to our own.

*Sanhyan, G., *Life of Reason; Reason in Religion*, chap. vi; *Hatch, E., *Influence of Greek Thought and Usages on the Christian Church*, chap. i;

*Taylor, Henry O., *The Mediaeval Mind*, chap. iii; *Shotwell, James T., *The Religious Revolution*, 1913; Farnell, L. R., *The Evolution of Religion*, 1905 (a brief and admirable statement of the anthropological attitude toward religious phenomena); *Marett, R. R., *The Threshold of Religion*; and, by the same, *Anthropology*, chap. viii; Knox, G. W., *Japanese Life in Town and Country*, chaps. vi-ix (contains striking parallelisms between oriental and western religious ideas).

Section 15. The General Religious Disposition in the Roman Empire. Hellenistic Paganism and Neoplatonism.

EMOTIONAL SETTING OF EARLY CHRISTIANITY. Stoicism (see above section 9) had a good deal in common with Christianity, but exalted reason. Decline of confidence in reason (modern parallels); consciousness of sin and pollution, the "impurity complex," the "mystery cults," longing for purification and salvation; great expansion of the supernatural—good and evil spirits, theurgy, mysticism, ecstasy, asceticism. Plutarch (b. about 50 A.D.) and his respectful attitude toward new gods and old myths.

HELLENISTIC PAGANISM. The philosophical and theological aspects: Stoicism; the *logos* conception; Alexandrian philosophy; relation of Hellenistic philosophy to Christian theology—the Gnostics. The emotional and ritualistic phases of Hellenistic paganism: the "mysteries," fertility and purification. The mysteries and later Christian ritual.

NEOPLATONISM: Kindred in mystical spirit to Christianity; communion through ecstasy with a super-rational God; intuition superior to reason; contempt of material things. Doctrines of Plotinus (about 204-270), its reputed founder, edited by Porphyry (about 232-300), whose attack on Christianity was later burned by order of Theodosius II. Jamblicus (d. about 330) defends unbounded credulity in his *de Mysteriis*. *The Celestial Hierarchy*, of which we first hear in the early sixth century, a Neoplatonic work ascribed by the Church to Dionysius the Areopagite. Augustine's attitude toward Platonism in his *Confessions* and *City of God*.

*Cumont, F., *Oriental Religions in Roman Paganism* (remarkable work); and by the same, *Astrology and Religion among the Greeks and Romans*;

Dill, *Roman Society in the last Century of the Empire*, Book I, chap. iv; *Harrison, Jane, *Themis*; and by the same, *Prolegomena to Greek Religion*; and *Ancient Art and Ritual*; Murray, Gilbert, *Four Stages of Greek Religion*; Farnell, L. R., *Cults of the Greek States*; *Hatch, *Influence of Greek Thought and Usages on the Christian Church*, especially chaps. ii, iii, x and xi; *Glover, G. W., *Conflict of Religions in the Early Roman Empire*, chap. iii (Plutarch) and viii (Celsus). For Neoplatonism see *Select Works of Plotinus* (Bohn Library); *extracts in Bakewell, *Source Book*; Bigg, C., *Neoplatonism*; *Whittaker, T., *The Neo-Platonists*; Inge, W. R., *The Philosophy of Plotinus*, 2 vols.; *Harnack, *History of Dogma*, appendix to Vol. I, pp. 336 sqq.; *Taylor, *Ancient Ideals*, Vol. II, pp. 80 sqq.; Croiset, *Histoire de la Littérature grecque*, Vol. V, pp. 820-841.

Section 16. Persian Syncretism: Mithraism: Manichaeism.

PERSIAN COSMOLOGY AND ESCHATOLOGY. Persian (Zoroastrian) explanation of the existence of evil by assuming two principles, the light and the dark, the good and the bad, at war with one another.

MITHRAISM. Worship of Mithras, the Mediator, appeared in the Roman Empire as early as Plutarch and later spreads widely in the west. Worship of the sun. Similarities between Mithraism and Christianity in its ritual, baptism, and communion. How the Christian Sunday and Christmas are associated with Mithras.

MANICHAISM. Manes, born at Ctesiphon about 215 A.D. (crucified in 272) largely affected by teachings of primitive Christianity. Rejection by the Manichaeans of the Old Testament, as the work of the evil spirit. Final judgment and separation of the light from the darkness. Manichaeism had its revelation of truth, its ecclesiastical organization, its asceticism, and heaven and hell. Revival in later Middle Ages of Manichaean conceptions by the Cathari (Albigensians).

*Cumont, F., *Oriental Religions in Roman Paganism*; and by the same, *The Mysteries of Mithra*; *Dill, *Roman Society from Nero to Marcus Aurelius*, final chapter (on Mithras); Harnack, *History of Dogma*, appendix to Vol. III, pp. 316 sqq., article "Mithras" in the *Encyclopedia Britannica*. On Manichaeism see the article "Manichaeism," in Hastings'

Encyclopedia of Religion and Ethics; and the exhaustive treatment by Cumont, F., and Kugener, A., *Recherches sur le Manichéisme* (1908 sqq.). The so-called "Acta Archelai," or alleged disputation between Manes and the Christian bishop Archelaus of Mesopotamia (early fourth century) may be found translated in Ante-Nicene Christian Library, Vol. XX. Augustine's works directed against the Manichaeans—to which sect he once belonged—are translated in The Nicene and Post-Nicene Fathers, First Series, Vol. IV.

Section 17. How Judaism Became the Background of the Religion of Europe: The Hebrew Bible.

CHRISTIANITY A DEVELOPMENT OF JUDAISM, to which it owed in great measure its early propagation. Christians assign to Hebrew literature a position far higher than to that of Greece and Rome, and accept Jewish tradition and history as history par excellence, beginning with the account in the Pentateuch of the creation, the fall of man, the flood, the confounding of tongues.

SUMMARY OF JEWISH HISTORY:—Founding of Hebrew monarchy under Saul, about 1050 B.C. David and Solomon, about 1025-950. Jerusalem becomes the capital. Division of Hebrew kingdom. Northern part taken by Sargon, 722. Destruction of Jerusalem by Nebuchadnezzar, 586. Babylonian exile. Return of Jews to Jerusalem under Cyrus, 537. In following centuries, successively under various foreign powers. Palestine finally becomes part of the Roman Empire, 6 A.D. Jerusalem destroyed by Titus in 70 A.D.

THE IMPORTANCE OF THE "DIASPORA" or Jews of the Dispersion, who were greatly affected by Hellenism. Alexandria a center of Jewish learning; the Septuagint, including the Apocrypha; Philo Judaeus (d. about 50 A.D.). The active missionary spirit of the Hebrews of his time.

FORMATION OF THE CANON OF THE OLD TESTAMENT, which was largely compiled, revised, or written after the exile. Characteristics of "inspired" scriptures: Everything true, essential, significant, equipollent, harmonious, interchangeable, and susceptible of infinite combinations, regardless of context and of historical and literary considerations. Necessity of allegorical interpretation. Excellently illustrated by Philo Judaeus'

"Allegories of the Sacred Laws." The messianic, prophetic, and apocalyptic elements in the Bible. The later Jewish angelology, demonology, and eschatology, exhibited in "the Book of Enoch." The wide range of superstitions illustrated by the pseudepigraphical literature and in the traditional rules and interpretations contained in the Talmuds.

CHRISTIANITY AND JUDAISM. The Christians reject the Jewish "Law" but regard the Bible as the background of their religion, believing that it foretold the coming of Jesus and described God's dispensations to his chosen people, whose successors they were. Like the Jews, they resorted freely to allegorical interpretations, "Biblical alchemy," as may be seen in "The Epistle of Barnabas" and the "Shepherd of Hermas."

Cornhill, C. H., *History of the People of Israel*—a brief, clear outline, the conservatism of which may be offset by Reinach, Solomon, *Orpheus, A General History of Religions*, 1909, chap. vii.; *Moore, Geo. F., *The Literature of the Old Testament* (Home Univ. Lib.), admirable; Duff, A., *A History of Old Testament Criticism* (1910); Loisy, Alfred, *The Religion of Israel*, 1908, delightful little volume; Peritz, I. J., *Old Testament History* (1915); Charles, R. H., *Religious Development between the Old and New Testaments* (Home Univ. Lib.); Kent, C. F., *The Students' Old Testament logically and chronologically arranged*, 6 vols., 1904 sqq., very interesting; Articles on Judaism and allied subjects in the new *Encyclopedia Americana*, Vol. XVI, pp. 59 sqq.; *The Apocrapha and Pseudepigrapha of the O. T. in English*, edited by R. H. Charles, 2 vols., 1913, very illuminating; *Matthews, S., *History of New Testament Times*. **Supernatural Religion*, part I, chap. iv, first part (on superstitions of the Talmud); *Hatch, *Influence of Greek Thought and Usages on the Christian Church*, chap. iii (on the Greek use of allegory); Philo Judaeus, *The Creation of the World and The Allegories of the Sacred Laws in his works in Bohn Library*, Vol. I; *Radin, Max, *The Jews among the Greeks and Romans* (1915).

For the relations of Christianity to Judaism see Schmidt, Nathaniel, *The Prophet of Nazareth*, chaps. iii-vii; *Harnack, *History of Dogma*, Vol. I, pp. 99-114; Wernle, *The Beginnings of Christianity*, Vol. I, pp. 1-36; Santayana, *Life of Reason, Reason in Religion*, chap. v (The Hebraic tradition). "The Epistle of Barnabas" and the "Shepherd of Hermas" may be found in *The Apostolic Fathers* (Loeb Classical Library). See also article "Israel," by Wellhausen, in 9th edition of *Encyclopaedia Britannica* and article "Jews" in the 11th edition. Juster, J., *Les Juifs dans l'empire Romain, leur condition juridique, économique et sociale*, Vol. I, 1914 (Vol. II to contain documents and tables). Excellent treatments of the topics in this and the following sections in the *Catholic Encyclopedia* and the *Jewish Encyclopedia*.

Section 18. How the New Testament became a part of the Intellectual Heritage of Europe.

THE SOURCES AND FORMATION OF THE NEW TESTAMENT. The early epistles. The synoptic gospels. Relations of gospels of Matthew and Luke to that of Mark, which in turn seems to have been compiled from earlier sources. The "Non-Markan" document, reconstructed by Harnack. Attitude of Paul toward the life of Jesus. Argument of those who believe that Jesus did not contemplate the founding of a "church" in the later sense. The New Testament formed by a process of exclusion. Justin (about 150 A.D.) refers only to "memorials of the apostles." Irenaeus (d. 202) assumes the existence of the canon of the New Testament, and Tertullian (d. about 230) first uses the term "Novum Testamentum." Long doubts, according to Eusebius, in regard to the inclusion of Hebrews, 2 Peter, Jude, and Revelation. Natural tendency to interpret the New Testament in the same way as the Old. The manner in which the New Testament entered into the literary and cultural complex of the Patristic and medieval periods.

Harnack, *History of Dogma*, Vol. I, pp. 41-75, and Vol. II, pp. 38-66; *Conybeare, F. C., *Myth, Magic, and Morals*, chaps. i-ix (a clear discussion of the sources for the life of Jesus); and by the same, *A History of New Testament Criticism*; *Muzzev, D. S., *Rise of the New Testament*; Bacon, B. W., *The Making of the New Testament*; Wrede, W., *The Origin of the New Testament*, three good brief accounts; Vincent, M. R., *A History of the Textual Criticism of the New Testament*; *Glover, *Conflict of Religions in the Early Roman Empire*, chaps. iv-v; *Reinach, *Orpheus*, chap. viii; *tianity*, Vol. I, especially chaps. iv-xiii; *Reinach, *Orpheus*, chap. viii; *Harnack, *The Expansion of Christianity*, Vol. I, pp. 1-39; Gwatkin, H. M., *Selections from Early Christian Writers* (a valuable little volume containing both the Greek or Latin original and a translation into English); *Lindsay, T. M., *The New Testament in Chronological Arrangement* (Everyman's Library).

Section 19. How the Catholic Church became the Intellectual Arbiter of Western Europe.

ORIGINS OF THE CHRISTIAN CULT. Informal character of the primitive "ecclesia." Development of the "overseers" into bishops and of the elders (presbyters) into priests. The clergy

becomes a distinct order. Divergence of belief and the appearance of numerous Christian sects beget the idea of orthodoxy and its opposite, "heresy." Contagious, wilful, and devilish character of heresy (see 2 Peter or Jude); Cyprian's "Unity of the Church"; doctrine that outside the one church there was no possibility of salvation.

THE RISE OF THE NEW ROME. Supreme position in questions of faith of the bishop of Rome, "the successor of the two most glorious of the apostles"; the Church takes on the characteristics of a State, which it was destined to retain, and adopts the Latin language, in the West, which it thus sanctified and perpetuated. Psychological power and attraction in the elaborate symbolism and ritual of the Church.

THE TRIUMPH OF CHRISTIANITY AND THE PROSCRIPTION OF PAGANISM AND HERESY. - Edict of Toleration issued by Emperor Galerius in 311. Policy of Constantine favorable to the Catholic Church. The sixteenth book of the Theodosian Code contains edicts relating to the Church issued by the Roman Emperors during the fourth and early fifth centuries. They make it a crime to disagree with the Church; they provide harsh penalties for heretical teaching and writing, and grant privileges to the orthodox clergy (exemptions from regular taxes and benefit of clergy). Theodosius the Great forbids (392) all worship of heathen gods and Christianity becomes a monopoly defended by the State.

Dill, *Roman Society in the Last Century of the Empire*, Book I, chap. ii; Shotwell, J. T., *A Study in the History of the Eucharist* (1905); Huttman, M. A., *The Establishment of Christianity and the Proscription of Paganism*, 1914, "Studies in History, Economics, and Public Law, Columbia University"; Workman, H. B., *The Foundation of Modern Religion* (1916); *Carpenter, J. E., *Phases of Early Christianity* (1916); *Cambridge Medieval History* (J. B. Bury, ed.), Vol. I, chaps. iv-vi, xvii; Thorndike, Lynn, *History of Medieval Europe* (1907), chaps. vi, ix, xv; Addis, W. E., *Christianity and the Roman Empire*; *Ayer, J. C., *A Source-Book for Ancient Church History* (1913); Hardy, E. G., *Christianity and the Roman Government*; *Lecky, W. E. H., *Rise and Influence of Rationalism*, chap. iv, part I, and opening of part II; *Robinson, J. H., *Readings in European History*, Vol. I, pp. 19-27 and 62-73, gives extracts illustrating the development of the Church; Reinach, *Orpheus*, chap. ix.

Section 20. Asceticism and the Monastic Life.

THE ORIGINS OF MONASTICISM AND THE PSYCHOLOGY OF ASCETICISM. The monastic life generally acknowledged during the Middle Ages to be the ideal Christian life. Important rôle of the monks and friars in the intellectual history of western Europe. Asceticism and monastic life by no means exclusively Christian. Ascetic tendencies of Stoicism and of Neoplatonism. The "saintly" spirit as discussed by William James. The "impurity complex" of the early Christians. Their exaggerated interest in questions of sex. Augustine's theory of original sin (*City of God*, Book XIV). Perenduring importance of this frame of mind.

THE EXPANSION AND REGULATION OF CHRISTIAN MONASTICISM. Monasticism first develops on a large scale in Egypt in the fourth century. St. Anthony (d. about 356). His life by Athanasius, and the life of Paul, the first hermit, by Jerome. Pachomius organizes monastic communities on the Nile and writes the first monastic rule. Egypt speedily becomes the source of the classical traditions of monasticism. Basil, bishop of Cappadocia, prepares a rule in which the Church undertakes to regulate the new tendencies. Church in the West accepts monasticism. "Regular" and "secular" clergy. The secular clergy become a celibate class. Apparent contradiction between the monastic and sacramental theory of salvation. Ambrose, Jerome, and Augustine ratify the new monastic life. Benedict draws up his rule for Monte Casino about 530, and furnishes a standard guide to the monastic life in the West. The principles of poverty, chastity, and obedience. Literary and scholarly phases of monasticism incidental.

*James, William, *Varieties of Religious Experience*, Lectures xi-xiii (on Saintliness); Workman, H. B., *Evolution of the Monastic Ideal*, 1913; *Taylor, H. O., *The Classical Heritage of the Middle Ages*, chap. vii; **Cambridge Medieval History*, Vol. I, chap. xviii; Swain, J. W., *The Hellenic Origins of Christian Asceticism* (1916); Parsons, E. C., *Religious Chastity* (1913); Sperry, E. E., *History of Clerical Celibacy in Western Europe* (1903); Harnack, *Monasticism* (an interesting essay); Jerome's *Life of Paul the First Hermit* is translated in the *Nicene and Post-Nicene Fathers*, Second Series, VI, pp. 299-303, and the *Life of Anthony*, attributed to Athanasius.

in same, IV, pp. 195 *sqq.* The Benedictine Rule is in large part translated in Henderson, *Select Documents of the Middle Ages*, pp. 274 *sqq.*; and in Thatcher and McNeal, *Source Book for Mediaeval History*, pp. 434 *sqq.*; **Life of St. Columban*, Translations and Reprints, Vol. II, no. 7.

Section 21. Summary of the Views of Man and the World Transmitted by the Later Roman Empire to Posterity.

THE SETTING AND NATURE OF PATRISTIC CULTURE. Indifference to natural phenomena (except viewed from the standpoint of theology, astrology and alchemy); loss of much of the older knowledge and of the clarity and proportion of Hellenism. The seven Liberal Arts—logic, grammar, and rhetoric; arithmetic, geometry, astronomy (astrology), and music—epitomized by Cassiodorus in the sixth century. Augustine's conception of the city of the devil comprised all secular matters. Origin of "sacred" as over against "profane" history. The "Chronicle" of Eusebius makes Hebrew history the background of all development. Sozomen, Socrates, and other Christian historians deal by preference with martyrs and miracles. Orosius, under Augustine's influence, writes his "Seven Books of History against the Pagans," which becomes a standard manual of general history. How allegory put an end to all literary criticism. Augustine's view of the resources of vagueness. (Confessions, xii, 31.) Gregory the Great's *Moralia*. Isidore of Seville (d. 636) prepares an encyclopaedia of edifying "Etymologies."

THE COSMOLOGY AND NATURAL SCIENCE OF THE PATRISTIC PERIOD. Natural science, like history, only valuable as illustrating God's ways to man, but magic useful to foretell the future, heal the sick, and make gold. The worst in Pliny's *Natural History* and other similar compilations utilized for moral and spiritual ends. The "Physiologus," which probably originated in Alexandria before 150 A.D. Flourishing of the miraculous; any unusual or startling occurrence attributed to the intervention of either God or the devil. The worship of what Harnack has called "a God of arbitrariness." Our legal expression "act of God" confined to unforeseeable natural disasters. How with a growing appreciation for natural law and a chastened taste in

wonders, miracles have tended to become a source of intellectual distress and bewilderment. Hebrew cosmology proves a grave obstacle to the advance of natural science. Eschatology took the place of our modern ideas of scientific and social progress. Theology the highest form of intellectual activity, the "Queen of Sciences." No form of ignorance or of perversity of thought left for the Middle Ages to discover.

*Taylor, H. O., *The Mediaeval Mind*, Vol. I, chap. iv (The Patristic Mind); *Supernatural Religion*, part I, chap. iv, end, and chap. v; Tavenner, E., *Studies in Magic from Latin Literature* (1916); Hayes, op cit.; Conybeare, *Myth, Magic and Morals*, chaps. xiii, xiv, xvi; McCabe, Joseph, *Augustine*; *Augustine, *City of God*, especially Bk. I, VII, X (IX in the Temple Classic edition), XII (XI), XVIII (XIV), XXI-XXII (XVII-XVIII). The "Physiologus" is edited in the Greek version with a German translation by Lauchert. Brehaut, *An Encyclopaedist of the Dark Ages*, *Isidore of Seville*, "Studies in History, Economics, and Public Law, Columbia University." White, Andrew D., *History of the Warfare of Science and Theology*, 2 vols. This work, in spite of its polemical character and its inaccuracies, is an unrivalled arraignment of the weaknesses of the whole traditional theological view of the world. The *Church History* of Eusebius, translated with admirable notes by Professor McGiffert, may be found in the Nicene and Post-Nicene Fathers, Vol. I. The histories of Socrates and Sozomen are in the same collection; Seignobos, op. cit., chaps. xxi-xxvii; *Cambridge Medieval History*, Vol. I, chap. xx; Sedgwick and Tyler, op. cit., chap. vii.

Section 22. Intellectual Stagnation of the Early Middle Ages.

THE BARBARIAN PERMEATION. Disruption of the western portions of the Roman Empire in the fifth century and the establishment of kingdoms under German chiefs. General reversion to a primitive barbarism, tempered a decadent classical and Christian culture. The Germans had little to contribute to the intellectual heritage, and with the destruction or decline of the towns and flourishing villas, books and education became more and more rare. Higher intellectual culture at that time very superficial and precarious.

EARLY MEDIEVAL CULTURE. Ineffectual attempt of Boethius to hand down Plato and Aristotle in Latin. How Cassiodorus (about 480-575) gave monasticism a literary turn. His rela-

tion to medieval classicism. His popular compilations. Gregory of Tours (d. 594) laments the general ignorance and resolves to write in "rustic" Latin. Gregory the Great (d. 604) regarded as one of the great Latin fathers. His protest against the prevailing artificiality of style. His popular "Dialogues" and his allegorical "Moralia." The Church forced to maintain a modicum of literary activity in order to survive. The monasteries a refuge for those with scholarly ambitions and tastes. Isidore of Seville (d. 636) and his compilations. The Venerable Bede (d. 735) represents the greatest possibilities of his time.

THE CAROLINGIAN REVIVAL AND SUBSEQUENT CULTURAL PROGRESS. Charlemagne reestablishes order and directs monasteries and cathedrals to maintain schools; relation of these to the medieval universities. Hopeful intellectual revival in the ninth century—Alcuin, Claudius of Turin, Agobard of Lyons, Rhabanus Maurus, Walafrid Strabo, Hincmar of Rheims, Erigena. Commentaries and text books. The annals grow into chronicles. Lives of Saints. Monastic schools at Tours, Fulda, Corbie, and elsewhere. Renewed invasions; chronic disorder and neighborhood war. Intellectual decline in following century. Legend of the Year 1000 (Baronius, Robertson, Michelet, Roy). Emergence of the modern languages during this period. Strasburg Oaths (843). King Alfred's interest in English. Political conditions tend to become better in the twelfth century.

For a general orientation as to the nature of the medieval period see the article "Middle Ages" in the *Encyclopedia Britannica* (by J. T. Shotwell); *Paetow, L. J., *A Guide to the Study of Medieval History* (1917) part III, an excellent syllabus of medieval culture with an exhaustive bibliography, much the best extant guide; *Taylor, *The Mediaeval Mind*, Vol. I, chap. v (The Latin Transmitters of Antique and Patristic Culture), vi (The Barbaric Disruption of the Empire), chap. x (The Carolingian Period), chap. xi (Continuity of Antique Thought in Italy), chap. xii (Mental Aspects of the Eleventh Century in France); Robinson, J. H., *The New History*, chap. vi, "The Fall of Rome"; Page, R. B., *The Letters of Alcuin* (1909); *Poole, R. L., *Illustrations of Mediaeval Thought*, chap. i-ii; Workman, H. B., *Christian Thought to the Reformation* (1911); Brehaut, E., *The History of the Franks by Gregory, Bishop of Tours* (1916); Seignobos, *Medieval and Modern Civilization*, chaps. i-viii.

Roger, *L'enseignement des lettres classiques d'Ausone à Alcuin* (1905), with exhaustive bibliography.

PART IV. RISE OF THE MEDIEVAL UNIVERSITIES AND THE PREVAILING OF A MEDIEVALIZED ARISTOTLE.

Section 23. Abelard and the Development of Theology into a Subject of Systematic Instruction.

INTELLECTUAL REVIVAL OF THE TWELFTH CENTURY. Seemingly rather sudden beginning, about the year 1100, of a steady progress in intellectual matters. Importance of the crusades, the growth of towns, the extension of commerce, and of other secular interests.

PETER ABELARD (1070-1142) AND THE RISE OF MEDIEVAL DIALECTIC. Abelard exhibits a taste for criticism. His "Historia calamitatum." The issue between Realists and Nominalists. Passage on the nature of "universals" in Boethius's translation of Porphyry's Introduction to Aristotle's "Categories." Abelard's "Sic et Non"; *Haec quippe prima sapientiae clavis definitur, assidua scilicet seu frequens interrogatio; . . . dubitando enim ad inquisitionem venimus; inquirendo veritatem percipimus.* He promoted the educational enthusiasm which led later to the formation of the Universities.

PETER LOMBARD (d. 1164) AND THE SACRAMENTAL SYSTEM. Appearance about the time of Abelard's death of Peter Lombard's "Sentences," a handbook (which first distinctly formulated the seven sacraments) affording a basis for an elaborate system of theological instruction. Contrast between the Scholastic theology and that of the Fathers.

*Rashdall, H., *Universities of Europe in the Middle Ages*, chap. ii; Poole, *Illustrations of Mediaeval Thought*, chap. v; Taylor, H. O., *The Mediaeval Mind*, chap. xxv (Heloise); *McCabe, Joseph, *Abelard* (a most fascinating biography); *Rogers, E. F., *Peter Lombard and the Sacramental System* (1917); Seignobos, *Medieval and Modern Civilization*, chap. viii.

Section 24. Revival of the Study of Law and Medicine.

MEDIEVAL REVIVAL OF ROMAN LAW. Importance of the appearance of a class of professional lawyers. Law gives scope

for intellectual activity and criticism, with perfect conservatism and veneration for authority. Irnerius lecturing on the Digest of Justinian at Bologna early in the twelfth century. Components of the "Corpus juris civilis" or Roman law as codified under Justinian, A.D. 527 *sqq.*: The Code, with its later supplements (novellae); the Pandects or Digest of the opinions of the leading jurists; the Institutes, a brief text book.

FORMATION OF THE CANON LAW. The codification of the Canon or Church law in Gratian's *Decretum* (*Concordia discordantium canonum*), published about 1142. This was based on older collections: Dionysius Exiguus collected the "decretals" of the popes about the year 500; the acts of the councils; the Pseudo-Isidorian collection of the ninth century. Misleading term "forgery." Gratian unsuspectingly included many "forged" documents. Bologna becomes the chief center of legal studies. Origin of our degree, LL.D.

RISE OF MEDIEVAL MEDICINE. Attention to medicine at Salerno. Rôle of authority, especially of Hippocrates (circa 460-370 B.C.) and Galen (b. about 130 A.D.). This subject in time takes its place as a professional study beside Theology and the two Laws.

*Rashdall, *Universities of Europe in the Middle Ages*, chap. iv, sections 1 and 2; *Vinogradoff, P., *Roman Law in Medieval Europe*; *Taylor, H. O., *The Mediaeval Mind*, chap. xxxiii; Davenport, E. H., *The False Decretals* (1916); Tardif, *Histoire des sources du droit canonique* (1887), an indispensable introduction to a study of the *Corpus juris canonici* of which Friedberg's edition is far the best for historical students; Marvin, F. S. (ed.), *Unity of Western Civilization*, chap. v.

Section 25. The Origin of Medieval Universities.

CAUSES OF THE RISE OF THE MEDIEVAL UNIVERSITIES. Increase of students and instructors made some sort of a guild organization expedient, and resulted naturally in *universitates* or corporations of teachers or students.

THE ORGANIZATION, CURRICULUM AND DEGREES IN THE MEDIEVAL UNIVERSITIES. Scholastic corporations appear at Paris and Bologna in the latter part of the twelfth century. At Bologna

the students' guilds control those of the professors. At Paris the Faculty of Arts predominates. The technical faculties of theology, law (civil and canon), and medicine. A degree originally admission to a professors' guild and permission to teach. "Magister," "Professor," and "Doctor" nearly synonymous; The A.B. and A.M. The original arts degree and the "classics." University lectures commonly consisted in commentaries on authoritative texts. No university buildings. Origin of the colleges. Oxford and Cambridge. Vestiges of medievalism in the modern university.

*Article "Universities" in the *Encyclopedia Britannica*; *Rasidat, *Universities of Europe in the Middle Ages*, I, pp. 144-162; Bologna, pp. 273-300; Paris, 350-361; Vol. II, chap. x, "Student Life in the Middle Ages"; Patten, L. J., *The Arts Course in Medieval Universities* (with bibliography), published by University of Illinois, 1910; Walt, M. de, *History of Medieval Philosophy*, 1909.

Section 26. How Aristotle's Works, in Latin Translations, became the Basis of Instruction in the Arts Course.

THE DEVELOPMENT OF THE ARISTOTELIAN ASCENDENCY IN MEDIEVAL LEARNING. Great importance of the introduction of Aristotle's works into the new universities in the first half of the thirteenth century. Previous to 1200 only the logical treatises available in Latin. Two sources from which his works came to Paris—through Constantinople and through the Mohammedan scholars of Spain. Circuitous manner in which a knowledge of Aristotle had reached Spain. Importance of the Mohammedan commentators, especially Avicenna (d. in Persia, 1037) and Averroes of Cordova (d. 1198). How it came about that the European universities based their instruction on a Latin translation of a Hebrew translation of an Arabic commentary on an Arabic translation [of a Persian translation] of a Syriac translation of a Greek philosopher. Averroes' worshipful attitude toward Aristotle. Worship of Aristotle readily explained by the vast amount of information in his works, his skillful classification of knowledge, his logical method, already in high repute, and above all by the fundamental consonance of his teleology, his

theories of essence, of the four elements, of God the "Prime Mover," and of the perfection of the heavens with Christian beliefs.

THE RISE OF SCHOLASTICISM. Lecturing on Aristotle's Natural philosophy and Metaphysics at Paris forbidden at first by papal legate (1215). In 1231 Gregory IX appoints commission of three to expurgate Aristotle. A generation later practically all of Aristotle prescribed by faculty of arts at Paris. Rise of the Dominicans as teachers. Albertus Magnus (about 1193-1280) prepares a paraphrase of Aristotle including the commentaries of the Arab philosophers. His disciple Thomas Aquinas, the chief of the scholastic philosophers (1227-1274), furnishes a more scientific edition. In this way the Dominicans Christianize and popularize the greatest of pagan scholars. The Averroists reject Christianity in favor of Aristotle as interpreted by Averroes.

THE REVERENCE FOR ARISTOTLE A TREMENDOUS OBSTACLE TO INTELLECTUAL PROGRESS. Aristotle's ill-understood works and often fundamentally erroneous doctrines remain for centuries the basis of higher education and an additional obstacle that had to be overcome before modern progress could begin. Roger Bacon declared with prophetic insight, *Si enim haberem potestatem super libros Aristotelis (that is the Latin translations) ego facerem omnes cremari, quia non est nisi temporis amissio studere in illis, et causa erroris et multiplicatio ignorantiae, ultra id quod valeat explicari.* Present vestiges of Aristotle-worship, especially in the field of political theory.

*Taylor, *The Mediaeval Mind*, Vol. II, chap. xxxix; Renan, *Averroës et l'Averroïsme*; Rashdall, *Universities of Europe*, I, pp. 345-392; *Robinson, J. H., *Readings in European History*, Vol. I, chap. xvii; Mandonnet, P., *Siger de Brabant et l'Averroïsme latin au xiiième siècle*, 2d ed., 1911, with second part containing documents. Grabmann, *Geschichte der Scholastischen Methode*; Husik, I., *A History of Medieval Jewish Philosophy* (1916).

Section 27. Nature and Scope of University Instruction in the Thirteenth Century: Scholasticism.

TEXTUAL BASIS OF SCHOLASTICISM. To the meager heritage which had been worked over and over again since the break-up

of the Roman Empire was now added all of Aristotle's works in faulty and obscure Latin translations, with the commentaries of the Arabic scholars and of the scholastic theologians. In addition to grammar and rhetoric, the "arts" course consisted mainly of lectures on Aristotle's "Physics," "Metaphysics," "Ethics," "On Animals," "On the Soul," his lesser works on natural phenomena, and above all, his logical treatises.

THE NATURE AND METHODS OF SCHOLASTIC THOUGHT. Exaggerated respect for Logic, which Albertus Magnus calls *omnis doctrinae modus*. Predominance of eristic over dialectic. Lists of propositions and their defence. Character of the scholastic philosophy best illustrated by the commentaries on Aristotle's works prepared by Albertus Magnus and Aquinas. Mainly commentary on opinions of earlier writers and refutation of ingenuous objections with little attempt to criticize the data on which the opinions were formed or test them by a reëxamination of the facts. Conception of "authoritative" texts. Necessity of harmonizing conclusions with the Christian Epic and the Patristic theology.

THE DEFICIENCIES OF MEDIEVAL CULTURE. All the weaknesses of the Hellenic reasoning, combined with those of the Christian Fathers, underlay what appeared to be a most logically elaborated and definitive system of thought. Defects of the university education: little literature; Greek practically unknown; Latin, in a sense, a living tongue as used among scholars. Chief contrasts between Mediaeval and ancient Latin. Vernacular languages not recognized by the scholarly world until recently. Little History or Natural Science, in our sense of the word, taught in the universities. (See below, Section 30.) The range of knowledge of the educated class in general may be judged from such convenient encyclopaedic works as the "*De naturis rerum*," of Alexander Neckam (1157-1217), and, in the next century, Bartholomew Anglicus's "*De proprietatibus rerum*" (extracts in Steele's "Mediaeval Lore"), or Vincent of Beauvais' vast *Speculum*, in three parts, "Naturale," "Morale," and "Historiale."

FREEDOM OF THOUGHT IN THE MEDIEVAL PERIOD. The founding of the Inquisition did not affect the intellectual classes except incidentally. Indications of a good deal of intellectual freedom. Nature of heresy and lowly status of most of the heretics.

*Taylor, *The Mediaeval Mind*, Vol. II, chap. xxxix (Albertus Magnus) and chap. xl (Aquinas); *Thorndike, *Medieval Europe*, chaps xx, xxi; *Rashdall, *Universities of Europe*, Vol. I, pp. 426-477; Aquinas, *Of God and His Creatures*, a translation of the *Summa contra Gentiles*, by Rickaby, 1905; Walsh, J. J., *The Thirteenth the Greatest of Centuries* (N. Y. Catholic Summer School), 1907, chaps. ii-v (to be taken *cum grano*); Coulton, C. G., *A Medieval Garner* (1910); Wulf, M. de, *History of Mediaeval Philosophy*, 1909; *Lea, H. C., *History of the Inquisition of the Middle Ages*, Vol. I, contains chapters on the rise of heresies and the organization and procedure of the Inquisition in the Thirteenth Century; Vol. III, chap. viii, deals especially with the relation of the Inquisition to the intellectual class. Articles "Inquisition" in the Catholic Encyclopedia, and in Hastings Encyclopedia of Religion and Ethics; Bury, J. B., *History of the Freedom of Thought*, chap. iii; Marvin, F. S., (ed.), *Progress and History*, chap. iv; Seignobos, C., *Medieval and Modern Civilization*, chap. ix.

Section 28. Leading Phases of Medieval Science: Astrology, Alchemy, and Magic.

ASTROLOGY. Chiefly through Arabic influence attention was turned in Western Europe to Astrology and Alchemy. Astrology, which developed in Babylonia and Assyria, found its way westward. Ptolemy's treatise. Judicial astrology as described by Roger Bacon. Later taught in the universities and regarded as an indispensable adjunct to medicine. Theory centered about the "temperamentum," as influenced by stellar conditions at the time of conception and of birth. Intricate matter to determine the relations of the planets and the sun and their combined influence in particular cases.

ALCHEMY developed in Egypt and was associated with applied chemistry. Its popularity in the Roman Empire. Arabic derivation of the term. Roger Bacon gives an excellent notion of the ambitions of the alchemists in the Thirteenth Century. Their fantastic terminology and secret and mystical operations all stood in the way of the rapid development of chemistry.

MAGIC. Continued interest in magic; represented by a considerable literature. Alexander Neckam, Michael Scot, Vincent of Beauvais, Bernard Gordon, Albertus Magnus.

Article "Astrology" in *Encyclopaedia Britannica*, 11th ed.; Bennett, E. H., *Astrology*, 1897, by a modern adept; Roger Bacon, *Opus Majus* (ed. by Bridges), Vol. I, pp. 238 *sqq.*; Article "Alchemy" in *Encyclopaedia Britannica*, 11th ed.; Berthelot, *La Chimie au Moyen âge*; Article "Alchimie," by Berthelot, in *Grande Encyclopédie*; Muir, M. M. P., *Story of Alchemy and the beginnings of Chemistry*, 1903; Thorpe, E., *History of Chemistry*, Vol. I; *Thorndike, Lynn, "Natural Science in the Middle Ages," in *Popular Science Monthly*, September, 1915, pp. 271 *sqq.*, and by the same, *The Place of Magic in the Intellectual History of Europe* (1905).

SECOND DIVISION

PART V. SLOW UNDERMINING OF THE SCHOLASTIC SYSTEM (FROM ROGER BACON TO LORD BACON).

Section 29. Excursus on the Question of Dividing the Past into Periods.

HISTORICAL CONTINUITY seems to preclude periodizing of the past. Historical divisions adopted by Orosius; by Otto of Freising (12th Century); current notions of "Middle Ages," "Renaissance" and "Reformation."

SUGGESTED DIVISION FROM THE STANDPOINT OF INTELLECTUAL DEVELOPMENT. I. Neolithic or primitive; II. Ancient; III. Hellenic; IV. Patristic; V. Scholastic (Pseudo-Aristotelian); VI. Period of slow disintegration of the Medieval System; VII. The "Aufklärung," from Lord Bacon to Voltaire (growing confidence in scientific research, and the kingdom of man; decline of authority, revelation, and the miraculous); VIII. Present period, of applied science, democratization, evolution, and the scientific study of mankind.

THE DAWN OF THE MODERN PROGRESSIVE TENDENCY. Beginning in the twelfth century there has been a tolerably steady progress, very slow at first, in regaining old knowledge and amassing new, in rejecting former errors, in criticising and applying knowledge and in spreading it by means of books and institutions of learning.

Section 30. Discoveries of the Thirteenth Century: Beginnings of Experimental Science: Roger Bacon.

GEOGRAPHICAL DISCOVERIES begin to extend beyond the limits of Ptolemy's "Geography." The Crusades; Travels of John of Plano Carpini (1246) and of William of Rubruquis (1253), and especially of Marco Polo (reached home 1295). Popularity of *Travels of Sir John Mandeville*.

PRACTICAL INVENTIONS: lenses, spectacles, concave mirrors, the compass, useful chemicals. Contributions of the Indian and Arabic scientists. Increased use of paper. Great importance of the introduction of the Arabic numerals.

ROGER BACON AND THE BEGINNING OF EXPERIMENTAL SCIENCE, which was to revolutionize thought. Attitude of Roger Bacon (b. about 1214, d. after 1292); Certitude and clarity can only come through "Experientia," not through authority or mere reason. Bacon's life focuses in letter from the pope, 1266, commanding him to write out his ideas. The *Opus Majus*, *Opus Minus*, and *Opus Tertium* completed before end of the next year. Bacon urges investigation of common things and the useful application of the knowledge thus gained. His letter on the possible achievements of applied science, prediction of the most advanced modern inventions. Obstacles in the way of scientific advance. Sterility of scholastic method. Views of Bacon not so exceptional as once supposed. Experimentation went on among artisans and alchemists.

*Marco Polo, *Travels*, many editions, the best of which is edited by H. Yule, 2 vols., 3d ed., 1903. **Travels of Sir John Mandeville*. The best edition is published by the Macmillan Co., for it contains the narratives of Plano Carpini, Rubruquis, and of Friar Odoric, on which "Sir John Mandeville" relied. Beazley, C. R., *The Dawn of Modern Geography*, 3 vols., 1897, 1906, especially vol. iii. *Sarkar, B. K., *Hindu Achievements in Exact Science* (1918). *Hulme, E. M., *Renaissance and Reformation* (1915), chap. vii; *Sedgwick and Tyler, op. cit., chaps. viii-ix. For Roger Bacon: Article in 11th ed. of *Encyclopaedia Britannica*; *Thorndike, Lynn, "The True Roger Bacon," in *American Historical Review*, January and April, 1916; and in *Philosophical Review*, May, 1914; and *Popular Science Monthly*, September, 1915; *Roger Bacon Essays* (in commemoration of seventh centenary), ed. by Little, 1914; Introduction by Brewer to his *Opera Inedita* of Bacon; Introduction and analysis in Bridge's edition of the *Opus Majus*; Cantor, *Vorlesungen über Geschichte der Mathematik*, sec. vii, pp. 699-768 (on the Arabians) and sec. vii on *Klostergelehrsamkeit*.

Section 31. Beginnings of Criticism of Social Institutions: Peter Dubois and Marsiglio of Padua.

DIFFICULTY IN ARRIVING AT AN OBJECTIVE AND CRITICAL ATTITUDE TOWARDS SOCIAL INSTITUTIONS. "Herd-instinct" and the

"Mores." Tendency of society to view its institutions as sacred and permanent and to regard those who criticize them as enemies of the social order.

MEDIAEVAL SOCIAL PHILOSOPHY. Mediaeval discussion of the relations between pope and emperor. Manegold of Lautenbach (d. circa 1085), John of Salisbury (1120-82) and the attack upon secular tyranny. Rediscovery of Aristotle's *Politics* broadens speculation in 13th century. Aristotle's political theories sanctified and harmonized with Christian doctrine in the *De Regimine Principum* of Aquinas. Dante attempts to co-ordinate Church and state in his *de Monarchia*.

PETER DUBOIS'S *De Recuperatione Terre Sancte* (written about 1303) offers a general program of reform—secularization of church property, international arbitration, reduction of litigation, and practical education.

MARSIGLIO OF PADUA writes his *Defensor Pacis* about 1324. His conception of popular sovereignty and of the supremacy of the state in ecclesiastical matters. His hostility to the papacy and his critical examination of the tradition of Peter's presence in Rome. Critical political theory in the Conciliar Movement (1414-1442).

Trotter, W., *Instincts of the Herd in Peace and War*; Sumner, W. G., *Folkways*; *Dunning, W. A., *A History of Political Theories, Ancient and Medieval*; Carlyle, A. J., *A History of Medieval Political Theory*, 3 Vols.; Gierke, O., *Political Theories of the Middle Ages*; Figgis, J. N., *From Gerson to Grotius*; *Powicke, F. M., "Pierre Dubois, a Medieval Radical," in *Historical Essays of Owens College, Manchester* (1907), pp. 169-91; Barker, E., "The Middle Ages," in *The Unity of Western Civilization* (Marvin, F. S. ed.), pp. 91-121; Dubois, *Recuperatione Terre Sancte*, edited by Langlois, with introduction, 1891; *Robinson, J. H., *Readings in European History*, I, 491 sqq., for extracts from the *Defensor Pacis*; Poole, R. L., *Illustrations of Mediaeval Thought*, chap. ix; *Coker, F. W., *Readings in Political Philosophy* (1915).

Section 32. Dante (1265-1321) and his World.

DANTE REPRESENTS THE HIGHEST SECULAR CULTURE OF HIS DAY. Availability of his works for the student of intellectual history. Range of his writings in Italian and Latin—*Vita Nuova*,

De Monarchia, *De vulgari eloquio*, *Commedia*. Particular interest of *The Banquet*, written for the intelligent public who did not know Latin. Political theory in the *De Monarchia*, "not a prophecy but an epitaph." Cosmology (*cf.* passage at end of thirty-fourth canto of *Inferno*); Ptolemaic system; Allegory on a par with scientific descriptions. Dante's attitude toward the past (*cf.* end of fourth canto of *Inferno*). His knowledge of ancient authors. Contrast between Dante and later humanists.

Dante, *Convivio*, as edited by Wicksteed in Temple Classics, *books i-ii. There is an excellent prose translation of the *Comedia* and the *New Life* by Charles Eliot Norton; the *De vulgari eloquentia* is translated by Howell; the *De Monarchia* by F. J. Church. Moore, Ed., *Studies in Dante*, First Series, contains an account of the scriptural and classical quotations in Dante's work; see, especially, complete list of Dante's citations, at end of the volume. *Taylor, *The Mediaeval Mind*, chap. xliii, an admirable review of Dante's attitude.

Vossler, K., *Die Göttliche Komödie* (1907-10, 2 Vols., in 4 parts), parts i-ii, an elaborate study of the antecedents of Dante's great work.

Section 33. Petrarch and Humanism.

NEWER VIEWS OF THE NATURE OF THE RENAISSANCE. The so-called "Revival of Learning" and the theory of a Renaissance or awakening of Western Europe from its supposed winter sleep through the rediscovery of the Latin and Greek authors.

"HUMANISM" a convenient term for the enthusiasm for Roman and Greek literature which began to develop in Italy in the fourteenth century. Also implies a revival of secular tastes and interests. Original meaning of "humanitas" (*cf.* Aulus Gellius, *Noctium Atticarum*, *Libri XX*, book xiii, 17). Term "litterae humaniores" misunderstood by Symonds and others; peculiar position of Italy in regard to Roman literature.

PETRARCH (1304-1374) the first distinguished Italian humanist; his power of self-revelation; his voluminous correspondence; "Letter to Posterity"; scope of his works; his conflicting ideals and ambitions as illustrated by his "Secret." Contents of his library of Latin writers; his inability to read Greek.

Translations of some of the more important of Petrarch's letters may be found in *Robinson and Rolfe, *Petrarch, the first Modern Scholar and Man of Letters*, 2d enlarged ed., 1914; especially Introduction, parts i, ii, iii, and vii; and Cosenza, M. E., *Petrarch's Letters to Classical Authors*, 1910. *Loomis, Louise, *Mediaeval Hellenism*, 1906 (Columbia University Doctor's dissertation), a remarkably clear review of the antecedents of humanism.

Nolhac, P., *Petrarch et l'Humanism*, 2d ed., 2 vols., 1907, admirable; Voigt, *Wiederbelebung des Classischen Alterthums*, 3d ed., 1893, book i (excellent); Körting, *Petrarca's Leben und Werke*, 1878. Brandt, Karl, *Das Werden des Renaissance*, 1908. This is a lecture which with its critical notes admirably sums up the newer view of the Renaissance. Wernle, Paul, *Renaissance and Reformation* (six lectures), 1912.

Section 34. Italian Scholarship in the Fifteenth Century.

RECOVERY AND EDITING OF ANCIENT TEXTS. Absence of literary criticism before Petrarch. With him began in Italy the systematic search for manuscripts, first of the Roman and then of the Greek writers, which were collated, copied, edited, and the Greek translated into Latin. Very few Roman writers "re-discovered"—chief of these, Tacitus, Pliny the Younger, Lucretius, and many of Cicero's letters. Great part of Roman literature still lost, e. g., Varro, much of Livy, Tacitus, Suetonius, etc. Recent finds in Egypt.

LITERARY SCHOLARSHIP OF THE ITALIAN HUMANISTS. Ignorance of Greek literature in the West from the sixth to the fifteenth century. Chrysolorus, teacher of Greek at Florence, 1396-1400. Reflections of his pupil, Leonardo Bruni (1369-1444), who begins the translating of Greek works into Latin. Aurispa arrives in Venice in 1422 with 238 Greek manuscripts from Constantinople; five years later Filelfo (1398-1483?) brings 48 more. Niccolo Niccoli (1364-1437), a Florentine patron of classical literature, leaves 800 books for a public library. Activity of Poggio (1380-1459). Vespasiano's (1421-1498) description of the libraries of Cosmo de' Medici (died 1464), of Pope Nicholas V (died 1454), and of the duke of Urbino. These all included patristic and scholastic works and indicate no special partiality for the "classics." Lorenzo Valla (1407-1457) shows some critical tendencies in repudiating the "Donation of Constantine." His *Elegantiae*. Flavius Blondus

(1388-1463) and the beginnings of erudite historical writing. Circle of Lorenzo de'Medici (died 1492). Ficino translates Plato into Latin (first ed. 1482), then Plotinus and Dionysius the Areopagite. Pico della Mirandola (1463-1494) and his enthusiasm for the Jewish Cabbala. Aldus Manutius, the Venetian printer, issues 33 editions of Greek writers from 1494 to 1515.

PLACE OF HUMANISM IN THE INTELLECTUAL DEVELOPMENT OF WESTERN EUROPE. Doubtless served to preserve a few Latin works that might have been lost and, what was far more important, to familiarize the West with that part of Greek literature which survives. It brought with it literary taste and some criticism, but did not revive Hellenism. It ultimately furnished a new basis for "liberal" education through the substitution of a study of the "classics" for the older Aristotelian curriculum. It certainly did something to produce or forward the secularization of intellectual life early in the sixteenth century, as it appears, for example, in Pomponazzi, Machiavelli, Guicciardini. Humanism did not free itself from Neoplatonic mysticism; it had little to contribute to modern scientific advance, which it hampered in some respects; it tended to perpetuate the confidence in ancient authority and impeded the development of the modern languages; it was *reactionary* rather than progressive.

*Hulme, E. M., *Renaissance and Reformation*, chaps. i-ix; *Emerton, E., *The Beginnings of Modern Europe*, 1917, chap. ix; *Burckhardt, *The Civilization of the Renaissance in Italy*, part III, especially chaps. i, iii, vi, ix, and xi; Thorndike, *Medieval Europe*, chaps. xxxi, xxxii; Symonds, J. A., *The Revival of Learning*, especially chaps. vi and ix; Sandys, *History of Classical Scholarship*, Vol. II, chaps. i-ix; Whitcomb, M., *A Literary Source Book of the Italian Renaissance*, contains translated extracts from writers of the time; Articles, "Kabbalah," in *Encyclopedia Britannica*; "Cabala," in *Jewish Encyclopedia*; and "Kabbala," in *Hastings' Encyclopedia of Religion and Ethics*.

Voigt, G., *Wiederbelebung des Classischen Alterthums*, books ii-v and book vii on the achievements of Humanists; Fueter, E., *L'Histoire de l'historiographie moderne*, Books I and II.

Section 35. Spread of Humanism Beyond the Alps, Especially into Germany.

FOUNDING OF THE GERMAN UNIVERSITIES; Prague (1348); Vienna (1365, reorganized 1384). During the succeeding generation Heidelberg, Cologne, Erfurt, and Leipzig (1409). In latter part of fifteenth century the number was more than doubled; Freiburg, Trier, Tübingen, Basel, Wittenberg (1502). Prevalence of dialectic, Aristotle, and "Kitchen Latin."

DEVELOPMENT OF GERMAN HUMANISM. Rudolph Agricola (1442-1484), the Petrarch of Germany. First generation of German humanists resemble the early Italian humanists in their conservatism. Contrast between the national enthusiasm of Germany and of Italy. Later "poets" of the opening sixteenth century. Celtis, Mutianus, Crotus Rubeanus (Latinization of proper names) find themselves in opposition to the conservative (Dominican) theologians. How Erasmus joined their circle. John Reuchlin (1455-1522) and his famous heresy case. *The Letters of Obscure Men* (1515-1517). Ulrich von Hutten (1488-1523) and his *Dialogues*. Appearance of Martin Luther.

*Creighton, M., *History of the Papacy*, Vol. VI, Book VI, chaps. i-ii; *Beard, C., *Martin Luther and the Reformation in Germany*, chap. iii; *Lindsay, T. M., *A History of the Reformation* (1906), Vol. I, pp. 42-78; *Hulme, op. cit., chap. xi; *Emerton, ~~Erasmus~~, chap. x; Pearson, K., *The Ethic of Free Thought* (2d ed. 1901), chap. viii; Janssen, *History of the German People*, Vol. I, chaps. iii-iv; Vol. III, Book V; Strauss, D. F., *Ulrich v. Hutten, His Life and Times* (1874); Whitcomb, M., *Literary Source-Book of the German Renaissance* (1899); Stokes, F. G., *Epistolae Obscurorum Virorum*, with English translation, 1909.

Voigt, *Wiederbelebung des Classischen Alterthums*, Book VI; Geiger, *Renaissance und Humanismus in Italien und Deutschland*, 1882, part II.

Section 36. Erasmus, the Embodiment of Northern Humanistic Enlightenment.

ERASMUS OF ROTTERDAM (1466-1536) comparable to Petrarch and Voltaire in his international reputation. Brief experience in a monastery. Goes to England, 1499, and to Italy (1506) to aid Aldus. His *Adages* give him a great reputa-

tion; his *Enchiridion militis Christiani* (1503) and his idea of Christ's philosophy, and hope of a Christian revival which should tend neither to paganism nor to ceremonial. *The Praise of Folly* (1511) illustrates the freedom with which a loyal Catholic could then criticize the prevailing religious notions and practices. Confidence in culture. Goes to Basel to aid Froben with edition of the Greek New Testament (1516) (the Complutensian polyglot edition already in preparation in Spain). Critical comments of Erasmus on the text. Erasmus continues to live in Germany. Reasons for his dislike and disapproval of Luther.

*Emerton, *Erasmus*; a readable biography, with extracts from Erasmus's works. **Praise of Folly*, many editions of a poor old English translation with Holbein's sketches. Nichols, *The Epistles of Erasmus* (1901-04), a scholarly translation of letters written before 1517. *Article, "Erasmus," in the 11th ed. of the Encyclopaedia Britannica.

A new edition of Erasmus's letters in the original Latin—*Opus Epistolarum*—is being issued by the Oxford Press, edited by P. S. Allen; Vols. I-II (1906-10) contain the letters written 1484-1517.

Section 37. The Making of Books before the Invention of Printing.

ORIGIN OF PAPER. Among the Greeks and Romans books commonly rolls of papyrus (*biblos, volumen*). Derivation of "paper" and "charter." The wax tablets and stylus for correspondence and memoranda; parchment "codex" mentioned before end of first century. Slow substitution of parchment for papyrus, which disappears in the West after the Arabic conquest of Egypt, in seventh century. By twelfth century paper begins to be introduced, through the Moors, but not much used in Christian Europe until the fourteenth century.

THE DEVELOPMENT OF PRINTER'S TYPE. The Roman capital letters (majuscules) mainly derived from a Greek alphabet. Origin of our lower case letters (minuscules) from the cursive writing of the Romans. Variations in forms—Gothic or black letter, and Roman.

STUDY OF PALEOGRAPHY; temptations to abbreviate in copying; chances of errors; inclusion of glosses; emendations, in-

terpellations. No two manuscripts ever alike; families of manuscripts; collation essential to critical editing; original autograph copy (holograph) invariably lost until comparatively recent period.

BOOK-MAKING BEFORE THE INVENTION OF PRINTING. What did it mean to publish (*edere*) a book before the introduction of printing? Petrarch's difficulties in getting his writings copied. Libraries mainly in monasteries. Boccaccio's account of the collection at Monte Cassino. Organization of the book trade in connection with the universities. Standard books pretty plentiful and convenient in form. Relation of the activity of the Humanists to the invention of printing.

Putnam, G. H., *Books and their Makers during the Middle Ages*, 2 vols., 1896-7, Vol. I, part I, deals with manuscript books; *Root, R. K., "Publication before Printing," in Publications of the Modern Language Association (1913); Nollac, *Petrarch et l'Humanism*, 2d ed., 2 vols., 1907. Wattenbach, *Schriftwesen im Mittelalter*, 3d ed., 1896, is the chief treatise on the subject. Thompson, E. M., *Handbook of Greek and Latin Paleography*, 4th ed., is excellent; Giry, A., *Manuel de diplomatique*.

Section 38. The Invention of Printing and its Cultural Effects.

THE INVENTION OF PRINTING. Disadvantages of *manu scripta*. Essential elements in printing:—cast type, ink, paper, press. Only advantageous when a considerable number of copies are made. Familiarity of the ancients with stamps and seals. Block books in the early fifteenth century. Donatuses in cast type may antedate 1440. Mayence Bible probably completed in 1456. Dated Psalter of the next year. First press in Italy, 1466. By 1500 there were some 42 presses which may have produced no less than 8 millions of copies of books by that date. Celebrated presses of Koburger at Nuremburg, Aldus at Venice, Froben at Basel. Caxton issues first book printed in England in 1477. Printers at first sedulously imitate calligraphy and current abbreviations of the scribes. The Gothic and the Roman style of letters. "Italics" invented. The colophon. Printing insures uniformity of copies and discourages tampering with the text.

CHARACTER OF EARLY PRINTED BOOKS. Great part of the early printed books "incunabula" — ancient works having to do with theology, religion, astrology, and mediæval thought, to which were added in time the Roman and Greek writers. Early in the sixteenth century printing begins to stimulate the production of new books. Great expansion of our historical sources from this time. Promise of a complete democratization of books.

*Blades, Wm., *Pontetouch at Printing*, 1891; DeVinne, T. L., *Invention of Printing*, 2d ed., 1878; Putnam, G. H., *Books and their Makers in the Middle Ages*, Vol. I, part II; Janssen, *History of the German People*, Vol. I, Book I, chap. i. A considerable library might be collected of works relating to early printing, but those mentioned give an excellent idea of the chief points.

Section 39. General Nature of the Protestant Revolt.

NEWER VIEWS OF THE NATURE OF THE PROTESTANT REFORMATION. Protestant writers have been in the habit of ascribing the most miscellaneous beneficent results to the "Reformation," which is really a vague and misleading partisan term. The "Reformation" or Protestant Revolt was unmistakably the secession of a number of European governments from the Roman Apostolic Church. This left the "Protestant" rulers free to reform the religious institutions of their respective realms regardless of the pope. "*Cujus regio ejus religio*." The close relation between Church and State continued. There was freedom of conscience for the princes only, who generally endeavored to enforce religious conformity. Treason and blasphemy replace heresy in Protestant countries.

PROTESTANTISM AND THE MEDIÆVAL RELIGIOUS SYSTEM. Protestants continue to accept the whole "Christian epic" and a great part of the beliefs of the church from which they seceded, but they agreed in rejecting the headship of the pope ("general priesthood of believers"); in gravely modifying the theory of the seven sacraments, especially of the eucharist (Mass) and Penance (confession and absolution); in adopting a different theory of the process of salvation, by surrendering the belief in purgatory and the treasury of superabundant merit (indulgences), and by deprecating "good works," such as pilgrimages, adoration of saints

and relics, hearing of masses, and leading the monastic life. Illustrated by Luther's attitude toward the problem of salvation.

PROTESTANT REVIVAL OF THE SUPREMACY OF SCRIPTURAL AUTHORITY. Protestants believed that they were reverting to the institutions and beliefs of the early uncorrupted church, and they placed unlimited confidence in the clearness and sufficiency of the Bible. The letter of the Scripture replaces the dogma of the Church as the sovereign guide of the faithful. Significance of this for subsequent intellectual history.

Schaff, Ph., *History of the Christian Church*, VI, ch. i (a warmly partisan Protestant statement); *The Catholic Encyclopedia*, articles "Protestantism" and "Reformation"; **Encyclopaedia Britannica*, 11th ed., article "Reformation"; Hulme, op. cit., chaps. xii-xix; *New Schaff-Herzog Encyclopedia of Religious Knowledge*, articles "Protestantism" and "Reformation," sections i-ii; **Beard, C., The Reformation of the Sixteenth Century in its Relation to Modern Thought and Knowledge* (Hibbert Lectures for 1883), chaps. iii-iv; *Cambridge Modern History*, I, chap. xix ("The Eve of the Reformation," by H. C. Lea).

Section 40. Relation of the Protestant Revolt to Intellectual Progress.

NON-PROGRESSIVE NATURE OF THE PROTESTANT REVOLT IN ITS INTELLECTUAL ASPECTS. The Protestant Revolt only incidentally intellectual in character. Extent of its debt to classical scholarship. Its issues mainly mediaeval. Luther and Calvin base their theories on the conception of man's innate and absolute badness and incapacity to will anything pleasing to God. Calvin's emphasis on the seemingly paralyzing doctrine of predestination. Protestant conception of the Bible. Luther's denunciation of the "pretty harlot," reason. Protestants shared with Roman Catholics the horror of "rationalists" and "freethinkers." The leaders of both parties agreed in hampering and denouncing scientific discoveries. These made by those living in Catholic and Protestant countries alike, who have commonly been indifferent to religious issues. Gibbon's masterly summary of the direct and incidental effect of the "Reformation" (*Decline and Fall*, end of chap. liv). The early Protestants did not aim consciously at progress, and their teachings may be said to have

been nine-tenths conservative and one-tenth reactionary. Effect of the Protestant Revolt on the intellectual orientation and attitude of the Roman Catholic Church—the Catholic “defence-reaction.”

*Beard, Ch., *The Reformation of the Sixteenth Century in its Relation to Modern Thought and Knowledge*, chap. v; *McGiffert, A. C., *Protestant Thought before Kant* (1911), chaps. i-viii (admirable); Böhmer, H., *Luther in Light of Recent Research* (1916); *Karl Pearson, *The Ethic of Free Thought*, chap. ix (excellent summary); Smith, Preserved, “Luther’s Early Development in the Light of Psycho-analysis,” in *American Journal of Psychology*, July, 1913; Bury, *History of the Freedom of Thought*, chap. iv; Harnack, *History of Dogma*, Vol. VII; Ruffini, F., *Religious Liberty* (1912), chap. v; Seignobos, C., *Medieval and Modern Civilization*, chaps. xx-xxi.

Troelsch, *Protestantisches Christenthum und Kirche der Neuzeit*, in “Kultur der Gegenwart,” Teil i, Abt. 4, erste Hälfte, 1909. In the same Sammelwerk, is Bezold, *Staat und Gesellschaft des Reformationszeit*, 1908. Berger, A. E., *Die Kulturaufgaben der Reformation*, 2d ed., 1908, an elaborate prolegomenon. Harnack, *Martin Luther in seiner Bedeutung für die Geschichte der Wissenschaft und der Bildung*, 4th ed., 1910; interesting pamphlet; Fueter, op. cit., Book III.

Section 41. Witchcraft and the Superstitions underlying it.

ORIGIN OF THE BELIEF IN WITCHCRAFT. Protestants retained all the old demonology and gave much prominence to the devil. The belief in witchcraft rested on the solid foundations of the Bible and of the Greek and Roman writers. The older European heritage reinforced by the Christian’s devil. The “witches’ sabbath” of Norse origin.

EMERGENCE OF THE WITCHCRAFT COMPLEX IN EARLY MODERN TIMES. Witchcraft in its modern form emerges clearly in the fifteenth century (Heresy of the Vaudois, hence voodoo, hoodoo). Pope issues (1484) bull “Summis desiderantes,” against witches in Germany. Next year the *Malleus maleficarum* (Witches’ Hammer) codifies all learning in regard to witches and the method of dealing with them. Great prevalence of witchcraft during sixteenth and seventeenth centuries in Protestant and Catholic countries alike.

METHODS OF DEALING WITH THOSE ACCUSED OF WITCHCRAFT. Character of the charges brought against those suspected of witchcraft. Illustrated by writings of Glanvil and Cotton Mather (late seventeenth century). Trial of those suspected of sorcery. Torture to force confession. The witch's mark. Penalties, burning alive, strangling, hanging. Tens of thousands of innocent persons perish.

THE WITCHCRAFT CONTROVERSY AND THE DECLINE OF THE DELUSION. Dr. Wier's attempt to refute notion of witchcraft, 1565, brutally answered by the learned Bodin in his "Demonology," 1580; Reginald Scott's "Discovery of Witchcraft" (1584), and the "Cautio criminals (1631) of Spe, a Jesuit, undermine the whole system. Those who tried to discredit witchcraft denounced as "Sadducees" and atheists. Glanvil's "Saducismus Triumphatus" (1681), a systematic defence of demonology. Cotton Mather's "Wonders of the Invisible World" sums up the Salem experiences in 1692. Francis Hutchinson's "Historical Essay concerning Witchcraft" (1718) assumed that witchcraft had already become an anachronism.

*Lecky, *Rise of Rationalism in Europe*, chap. i; Lowell, J. R., essay on "Witchcraft," in *Among my Books*, Vol. I; *Burr, George L., *The Witch Persecutions* (translations and reprints, Vol. III, No. 4), an admirable collection of vivid extracts from first hand material. By the same, *Narratives of Witchcraft*, 1914, confined to American colonies. *Smith, Emma P., *The Progress of Free Thought in England in the Seventeenth and early Eighteenth Centuries*, chap. iii (A valuable collection of original sources, in preparation). Notestein, W., *A History of Witchcraft in England*, 1911. The earlier phases of witchcraft are treated by Lea, H. C., *History of the Inquisition in the Middle Ages*, Vol. III, chaps. vi-vii, and above all, Hansen, J., *Zauberwahn, Inquisition und Hexenprozess im Mittelalter* (1900) and the accompanying *Quellen und Untersuchungen zur Geschichte des Hexenwahns* (1901), with many extracts from inaccessible sources. Professor Burr is now engaged in preparing for publication a manuscript history of witchcraft left by the late Henry C. Lea.

PART VI. BIRTH OF THE MODERN SCIENTIFIC SPIRIT.

Section 42. Discovery of the Vastness and Order of the Universe.

HELLENIC AND CHRISTIAN CELESTIAL MECHANICS. The conceptions of man and of God closely associated with the conception of the cosmos. Christian-Aristotelian-Ptolemaic conception of the universe. The theory of transparent spheres, revolving about the earth, in which the heavenly bodies were fixed. *Primum mobile*. Eternal circular motions contrasted with the transient rectilinear motions of the earth. The exalted nature of the heavenly bodies, which were not made of the four elements of which all earthly things were composed. Roger Bacon's ideas of the distance and size of the heavenly bodies

Terra non habet aliquam quantitatem sensibilem respectu coeli, sicut probat Ptolemaeus. Universe limited and fixed in absolute space. The "Christian Epic" essentially geocentric in its presuppositions.

COPERNICUS AND GIORDANO BRUNO. Copernicus' *De Revolutionibus orbium coelestium*, Libri VI, 1543. Preface, probably by Osiander; Copernicus' own introduction acknowledges his debt to ancient philosophers. Still believed in fixed starry sphere. His discovery had little immediate effect on prevailing notions. Giordano Bruno (1548-1600) made it his chief business to think out and set forth in Latin and Italian the implications of the discovery of Copernicus. "On the Immeasurable and the Countless": single law, single force, infinite God, infinite universe, no absolute motion, no center, no up, no down, no light, no heavy—all things relative. Bruno burned by the inquisition at Rome.

THE ORIGINS OF MODERN ASTRONOMY. Tycho Brahe (1546-1601) and the provision of accurate astronomical data. Kepler (1571-1630) and his discovery of the elliptical orbits of the planets. Galileo (1564-1642). His telescope (1609) speedily improved so as to magnify 32 diameters. His attitude toward the Copernican theory, which was condemned by Roman inquisition 1616. "*Dialogo dei due massimi sistemi del mon-*

do," 1632, and Galileo's condemnation. Galileo's chief discoveries were in physics and mechanics. Isaac Newton (1642-1727) proved that the laws of falling bodies apply to the heavens. This made a deep impression and finally the newer conceptions of the universe began to be popularized—for example, in Pope's "Universal Prayer" (1737).

*Abbott, W. C., *The Expansion of Europe* (1917), Vol. I, chaps. x, xxi; Stimson, Dorothy, *The Gradual Acceptance of the Copernican Theory of the Universe* (1917); Boulting, W., *Giordano Bruno* (1917); Sedgwick and Tyler, op. cit., chap. x; Berry, A., *Short History of Astronomy*, 1899; Encyclopaedia Britannica, 11th ed., Articles, Copernicus, Bruno, Kepler, and Galileo; Höfding, *History of Modern Philosophy*, I, pp. *103-148 and 167-183; Galileo, *Dialogues concerning two new sciences*, tr. by Crew and Salvio, 1914; White, A. D., *History of the Warfare of Science with Theology*, Vol. I, chap. iii; Owen, J., *Skeptics of the Italian Renaissance*, chap. iv (on Bruno); Duhem, P., *Le Système du monde*.

Section 43. Exploration of the Earth: The Geographical Basis of the Commercial Revolution.

THE ORIGINS OF MODERN GEOGRAPHIC DISCOVERIES. Ptolemy's "Geography" remains the standard in spite of discoveries of the thirteenth and fourteenth centuries. Gradual progress down the African coast in the fifteenth century. Diaz rounds the Cape of Good Hope, 1486. Columbus, as he believed, reaches "The Indies" by sailing west, 1492, and Vasco da Gama really reaches India by sailing around Africa, 1498. Portuguese visit the Malay Archipelago, 1511. Magellan's ship circumnavigates the globe (1519-1522).

THE COMMERCIAL REVOLUTION: Transformation of trading routes; expansion of commerce; rise of rival commercial empires; colonization; new commercial methods; new commodities; rise of middle class; Mercantilism. Reaction of commercial revolution on politics—the rise of the dynastic national state.

INTELLECTUAL CONSEQUENCES OF THE DISCOVERIES AND THE COMMERCIAL REVOLUTION: The question what influences, other than commercial and industrial, did the contact with new and, in some cases, highly civilized peoples exercise on European thought?

Contact of cultures disturbs the medieval views and shakes tradition and provincialism; stimulation of curiosity, especially in natural science; overthrow of older geographic and cosmic notions; development of interest in customs of other peoples; growth of the concept of a "state of nature" and the eulogy of primitive man; origins of anthropology, comparative philology and religion; effect on history, literature and art. Intellectual effects, while apparent in the seventeenth, did not become conspicuous until the eighteenth century.

*Shepherd, W. R., "The Expansion of Europe," in *Political Science Quarterly*, 1919 (summary articles by the leading authority on the subject); Abbott, W. C., *The Expansion of Europe*, Vol. I, chaps. ii, iii, ix, x, xvi; Vol. II, chap. xxiv; Keltie and Howarth, *History of Geography*; Hayes, C. J. H., *Political and Social History of Modern Europe* (1914), Vol. I, chap. ii; Cunningham, W., *Western Civilization*, Vol. II; *Cambridge Modern History*, Vol. I, chaps. i-ii (by E. J. Payne); Jacobs, J., *The Story of Geographical Discovery*; *Seignobos, C., *Medieval and Modern Civilization*, chap. xvii.

Section 44. Montaigne (1533-1590) and his Perception of the Varied Interest of the Purely Human.

MONTAIGNE AND THE APPEARANCE OF THE NEW SPIRIT OF CRITICISM AND TOLERANCE. Montaigne's "Essais" (Books I-II, 1580. and III, 1588) the first permanently popular French prose work. "Je suis moy mesme la matière de mon livre." His superb nonchalance. His attitude toward the classical authors, which he assimilates rather than imitates, and uses to reenforce his own ideas. Affection for Plutarch and Seneca. To what degree he was affected by the new geographic discoveries. His appreciation of the inconstancy and relativity of all our thoughts and conduct. Endless variety the very essence of nature, and the inculcation of this the chief end of education. "There is as much difference between us and ourselves as between us and others. We can know only our own perceptions. "Que sais-je?" His unbounded tolerance and distaste for dogmatism. His God no more exacting than he. Custom and law highly artificial but properly binding on the outer man. Extraordinary popularity of the Essays, especially in the eighteenth century.

There is little use in reading about Montaigne when he writes better of himself than any one else can. Of his "Essays," which are easily obtained either in Cotton's translation, revised by Hazlitt, or in Florio's, that on **"The Education of Children"* (Bk. I, 25), and that **"On Books"* (Bk. II, 10), are perhaps the best worth reading for our purposes. Höffding, *History of Modern Philosophy*, Vol. I, pp. 26-33.

Section 45. Francis Bacon and "The Kingdom of Man."

LORD BACON THE "BUCCINATOR" OF EXPERIMENTAL AND APPLIED MODERN SCIENCE. His high connections; plans a "*Temporis partus maximus*" about 1582. His public career. First edition of the "Essays," 1597; "*Advancement of Learning*," 1605. His political disgrace, 1621. His "*Magna Instauratio*" of which the *Novum Organum* is a part. His lively appreciation of the existing obstacles to scientific advance; the idols of the tribe, cave, market-place, and theatre. "We are the ancients." Necessity of escaping from the scholastic method of "tumbling up and down in our reasons and conceits," and studying the world about us. Undreamed of achievements possible if only the right method of research be followed. Bacon's "*New Atlantis*" with its House of Solomon. Bacon used his vast and varied literary resources to spread abroad the spirit of modern scientific progress and the distrust for ancient authority. By formally according theology the supremacy among the sciences and eliminating the consideration of final causes from the field of scientific research he avoids religious criticism. Bacon's neglect of contemporaneous discoveries of Keplér, Bruno, and Galileo. Rejects the Copernican system. His feeble "*Sylva sylvarum*." Draper's savage attack on him in his "*Intellectual Development*."

*Bacon, *Advancement of Learning*, especially book i (excellent edition with Life of Bacon in Clarendon Press Series; cheaper edition in "The World's Classics" series, also issued by the Clarendon Press and containing *The New Atlantis*); **Novum Organum*, especially book i; *Höffding, *History of Modern Philosophy*, I, 184-206; Libby, W., *An Introduction to the History of Science*, chap. v; *Article "Bacon" in the 11th ed. of the *Encyclopaedia Britannica*. *The Philosophical Works of Francis Bacon*, edited by J. M. Robertson (1-vol., 1905), is an excellent inexpensive edition.

Section 40. Descartes and the New Philosophy.

DESCARTES (1596-1650), educated by the Jesuits, goes to the wars for worldly experience. Later scholarly retirement in Holland, 1629-1649. His "*Discours de la Methode*" (1637) in which he proposed to reach the truth through analysis and clear ideas, on the assumption that God will not deceive. His expression "innate" ideas later misinterpreted. His mechanistic theory of the universe—*Terram totumque hunc mundum instar machinae descripsi* (including man's body and the animals, which he held to be automata). His fundamental interest in mathematics. His geometry (Cartesian coördinates) and its admirable clarity. His claim to originality and his rejection of all authority. His anxiety to conceal his belief in the movement of the earth—"Bene vixit qui bene latuit."

*Descartes, *Discourse on Method, Meditations and Principles of Philosophy* (Everyman's Library); *Hoffding, *History of Modern Philosophy*, Vol. I, pp. 212-241; Encyclopaedia Britannica, 11th ed., article "Descartes."

Section 47. Conditions and Achievements of Scientific Research in the Seventeenth Century.

OBSTACLES TO SCIENTIFIC ADVANCE: the universities still dominated by Aristotle; the theological faculties; the censorship of the press exercised by both church and state; the rôle of the Jesuits.

BEGINNING OF THE POPULARIZATION OF SCIENCE. Development of "philosophic societies" of amateurs who studied experimentally physics, anatomy, etc. Development of a lay public interested in science. Bacon, Descartes, and Galileo each appeal to public in his mother tongue, as well as in Latin. New science tends to take modern popular form.

THE FOUNDATION OF SCIENTIFIC SOCIETIES AND THE GROWTH OF COOPERATIVE SCIENTIFIC ACTIVITY. Origin of the Royal Society, formally founded in 1662; its "*Transactions*." French Academy of Sciences (1666); The "*Journal des Sçavants*" began to appear in 1665. Leibnitz founds the Berlin Academy in 1700.

SOME REPRESENTATIVE SCIENTIFIC ADVANCES OF THE SEVENTEENTH CENTURY: (1) *Mathematics*: Importance of the algebraic notation earlier brought from the East; logarithms invented by Napier and Briggs about 1616; Descartes' analytical geometry, 1637; Cavalieri (1598-1647) and the theory of indivisibles; Desargues (1593-1662) and projective geometry; Fermat (1601-1665) and the theory of numbers; Pascal (1623-1662) and the theory of probability; Newton (1667) and Leibnitz (1677) perfect the calculus; Halley (1656-1742) and mathematical statistics; (2) *Physics*: Toricelli (1608-1647) invents the barometer; Von Guericke (1602-1686) perfects the air pump and studies atmospheric pressure; Grimaldi (1616-1663), Newton, Huygens (1629-1695) and Hooke (1635-1703) develop the science of optics; Huygens' pendulum clock, 1657; Fahrenheit's thermometer, 1709; (3) *Astronomy*: importance of development of higher mathematics and study of optics; improvement of the telescope; Newton's study of celestial mechanics; Halley forecasts the reappearance of the comet of 1682 (period of 76 years); Paris Astronomical Observatory, 1667, Greenwich Observatory, 1676; (4) *Chemistry*: Van Helmont (1577-1644), Mariotte (d. 1684), Robert Boyle (1627-1691) and the study of gases; Boyle and Stahl (1660-1734) reject the Aristotelian theory of the four elements; Boerhaave (1668-1738) and the origins of organic chemistry; (5) *Biology*: importance of microscope: Vesalius (1514-1564) and the origins of the study of anatomy; Harvey (1578-1657) discovers the circulation of the blood; Hooke first discovers the cellular structure of organic bodies (1667); Malpighi (1628-1694) and Grew (1641-1712) extend Hooke's investigations to a study of the anatomy of animals and plants; Leeuwenhoek (1632-1723) uses microscope to discover animalcules, blood corpuscles, bacteria, etc.; Swammerdam (b. 1637) and the microscopic study of the insectivora; Redi (1629-1698) and the investigation of putrefaction; Borelli (1608-1679) introduces mechanics into biology; John Ray (1628-1705), the leading naturalist of the century; Thomas Sydenham (1624-1689) and others appropriate the new scientific advances for the science of medicine and undermine the authority of Hippocrates and Galen:

(6) *Geology*: Steno (1631-1687), Hooke, Ray and Woodward (1665-1728) make some advances towards a comprehension of the geological history of the earth. Leibnitz (1646-1716) the encyclopedic scientist of the period and probably the most versatile scholar since Aristotle.

*Shipley, A. E., *The Revival of Science in the Seventeenth Century* (1914); *Sedgwick and Tyler, op. cit., chaps. xii-xiii; Libby, op. cit., chaps. vi-viii; *Marvin, F. S., *The Living Past*, chap. viii; Abbott, op. cit., Vol. II, chaps. xxiv, xxviii; Cajori, *History of Mathematics*, pp. 130 sqq.; *Ornstein, Martha, *Rôle of the Scientific Societies in the Seventeenth Century*, 1913 (Columbia Doctor's dissertation), excellent, with full bibliography. James Howard Robinson *The Great Comet of 1680* (Dissertation). *Encyclopaedia Britannica*, 11th ed., article "Academies"; *Histoire Générale*, edited by Lavissee and Rambaud, Vol. V, pp. 450 sqq., and VI, pp. 394 sqq., good chapters by Paul Tannery; Dannemann, F., *Die Naturwissenschaften in ihrer Entwicklung*, Vol. II, 1911; Gerland und Traumüller, *Geschichte der physikalischen Experimentierkunst*, 1899.

Section 48. Development of Toleration and the Freedom of the Press.

THE PSYCHOLOGY OF INTOLERANCE: Fear, vested interests, the comfortable nature of the traditional and the habitual. The painful appropriation of new ideas. The emotional and the critical foundations of tolerance.

THE INTOLERANCE OF THE CATHOLIC CHURCH: a natural result of its statelike organization and claims. Lecky's fundamental error as to the solicitude of the Church for the "damned." Its doctrine of exclusive salvation and its conception of heresy both sanctioned by the State. Doubt and error regarded as sinful. The relation of faith and reason. Beginnings of censorship of the press after the invention of printing. Licensing by ecclesiastical and civil authorities. The Tridentine Index of 1564. *Indices librorum expurgatorum et prohibitorum*. Fierce edicts issued in France.

THE PROTESTANTS AND INTOLERANCE: Protestants of sixteenth century accept the theory of intolerance (except Anabaptists and Socinians). Intolerance in England. Long Parliament ratifies system of Star Chamber, 1643, and calls forth Milton's "A:epagitica," for the liberty of unlicensed printing (1644).

Chillingworth's "The Religion of Protestants a Safe Way to Salvation" (1637) and the doctrine of *adiophora* or things indifferent.

SITUATION IN ENGLAND AFTER RESTORATION. Glanvil's "Vanity of Dogmatizing," 1661; Death penalty for heresy removed 1677; Bayle's "Compel them to come in," 1686; Locke's first "Letter on Toleration," 1689; Censorship allowed to lapse, 1694, and Act of Toleration, 1695 (excepting Catholics and Unitarians). Anthony Collins, "Discourse of Free-thinking," 1713. Parliament continues occasionally to condemn books.

*Smith, E. P., op. cit., (see above sec. 41) chap. v; Symonds, J. A., *Renaissance in Italy, The Catholic Reaction*, part I, chap. iii; Encyclopaedia Britannica, 11th ed., article "Press Law"; *Klein, A. J., *Intolerance in the Reign of Elizabeth* (1917); *Milton, *Areopagitica* (edited by Hales, Clarendon Press Series, with historical introduction); Putnam, G. H., *The Censorship of the Church of Rome*, 1906-7. The best general treatment of the subject is to be found in *Lecky, *Rise and Influence of Rationalism*, chap. iv, part II. Bury, J. B., *A History of Freedom of Thought* (Home Univ. Lib.), chaps. i, v, excellent brief account. Schaff, Ph., *The Progress of Religious Freedom as shown in the History of Toleration Acts*, 1889; *Ruffini, F., *Religious Liberty*, chaps. viii, ix.

Section 49. The Decline of Belief in the Miraculous: The English Deists and the Disintegration of the Christian Epic.

REACTION OF INTELLECTUAL PROGRESS UPON THE CONCEPTION OF THE MIRACULOUS. Christian conception of "revealed" truth, especially in the Bible. Revelation supported by miracles and prophesy. Protestants reject mediaeval miracles. Freedom of thought in England permits criticism of the old system of belief in the light of new scientific knowledge.

THE GROWTH OF DEISM AND RATIONALISM: Herbert of Cheshire (died 1648) the "first Deist." His five principles of natural religion set forth in his *Religion of the Gentiles* (completed in 1645). He rejects revelation. Charles Blount (died 1693) formulates Deism and seeks to discredit revelation and miracles. Locke's *Reasonableness of Christianity* (1695) and Toland's *Christianity not mysterious* (1696). Spinoza in

his *Tractatus Theologico-Politicus* (1670) had laid the foundations for what would now be called "the higher criticism." Reflections of Hobbes on the authorship of the Pentateuch. Shaftesbury (1671-1713) divorces morality from religion and theology. Tindal's *Christianity as old as the Creation, or the Gospel a Republication of the Religion of Nature* (1730). Pope's "Essay on Man" (1732-34) dedicated to the deist Bolingbroke. Butler's *Analogy*, 1737. Hume's essay on Miracles, 1748, and his *Natural History of Religion*, 1757. Thomas Paine's comprehensive attack upon the "Christian Epic" in his *Age of Reason* (1794). Rationalism in America. Fundamental theological revolution involved in the thesis of the Deists as to the universality and reasonableness of religion. Questions as to how far the Deists were affected by the new religious data supplied by the discoveries. [For conservative reaction against Rationalism see below, section 52.]

*Lecky, *Rise and Influence of Rationalism*, chap. ii; *McGiffert, *Protestant Thought before Kant*, chap. x; Benn, A. W., *History of English Rationalism in the Nineteenth Century* (2 vols., 1906), Vol. I, chap. iii; Stephen, Leslie, *History of English Thought in the Eighteenth Century*, Vol. I; Bury, op. cit., chap. vi; *E. P. Smith op. cit., Leland, John, *A View of the Principal Deistical Writers* (2 vols., 1754-6), an old, hostile review of the movement; Hefelbower, S. G., *The Relation of John Locke to English Deism* (1918); Huxley, T. H., *Hume*; *Riley, Woodbridge, *American Thought from Puritanism to Pragmatism* (1918), chaps. iii, iv.

Section 50. The French Philosophes.

DEPENDENCE OF THE FRENCH PHILOSOPHES ON THE ENGLISH DEISTS. The Anglo-mania in the cultured circles of France in the eighteenth century.

VOLTAIRE (1694-1778) and his extraordinary reputation and influence. Sojourn in England, 1726-29. His *Philosophic Letters on the English* (burned by order of the Parlement of Paris) well illustrates his debt to the English. John Morley's estimate of Voltaire. Vast range of his literary appeal. *The Philosophic Dictionary*, 1765.

DIDEROT, THE ENCYCLOPEDISTS, AND THE POPULARIZATION OF THE NEW SCIENCE AND RATIONALISM. Diderot (1713-1784).

The *Encyclopaedia* (1751-1765) and the obstacles which its editors encountered. Its nature scientific rather than polemic. D'Holbach and the atheists. Relation of the Philosophes to the French Revolution.

*Robinson and Beard, *Development of Modern Europe*, Vol. I, chap ix;

*Morley, John, *Voltaire*, especially chaps. i, ii, and v; the same, *Diderot and the Encyclopaedists*, 2 vols.; Hall, E. B., *The Life of Voltaire* (1903), 2 vols.; and by the same, *Voltaire in His Letters* (1919); Faguet, *Le 18ième Siècle*; Voltaire, *Lettres philosophiques sur l'Anglais*, edited by Lanson, 2 vols., 1909, with elaborate notes; Lange, *History of Materialism*, Vol. II, chaps. i-iii; *Diderots' Early Philosophical Works*, trans. by Margaret Jourdain (1916); Cushing, Max P., *Baron d'Holbach*, 1914.

Section 51. Development of the Idea of Progress and the Spirit of Reform.

LATE APPEARANCE OF A DEFINITE THEORY OF PROGRESS. Excessive conservatism of primitive peoples. The Greeks speculated on the origin of things, but did not have a conception of the possibility of indefinite progress. Early views of a descent from a "Golden Age." Common classical view of recurring cycles of historical development. The Hebrew Prophets. The Christian conception of creation and eschatology. Progress of man from the earliest times to the opening of the seventeenth century almost altogether unconscious.

GRADUAL GROWTH OF AN IDEA OF PROGRESS. Lord Bacon's conception of betterment through the acquisition and application of natural science. Idea of progress implied a decline in the strength of ancient authority. Descartes' independence of the past. Swift's *Battle of the Books*; Fontenelle's *Dialogues of the Dead* (1683) aims to discredit authority of classical antiquity. Vico (1668-1744) and the formulation of an historical theory of progress. Turgot's Sorbonne Discourse on "The Successive Advances of the Human Mind" (1750) sets forth the continuity of history and the cumulative nature of progress. Herder's *Ideen zur Geschichte der Menschheit* (1784). Kant's *Idea of a Universal History* (1784). Condorcet's *Tableau historique des progrès de l'esprit humain* (1793). Godwin's *Inquiry concerning Political Justice* (1793). Relation of rationalism and

the theory of progress to the criticism of social institutions and the growth of social reform.

Abbott, Vol. II, chap. xxxvi; Flint, *History of the Philosophy of History*, especially pp. 87-104; and by the same, *Vico* (1884); Delvaille, J., *Essai sur l'histoire de l'idée de Progrès jusqu'à la fin du XVIII^e Siècle* (1910); Croce, B., *The Philosophy of Vico* (1913); Stephens, *The Life and Writings of Vico*, pp. 159 sqq.; Morley, *Critical Miscellanies*, Vol. II; Seignobos, C., *Contemporary Civilization*, chaps. iii-v.

Section 52. Reaction Against the Thought of the Eighteenth Century.

THE PHILOSOPHICAL REACTION. ROMANTICISM. How Hume awoke Kant from his dogmatic slumber: Herder's *Auch eine Philosophie der Geschichte* (1774) criticizes spirit of the *philosophes* and tends to "romanticism." Montesquieu's *Spirit of Laws* (1748), essentially conservative: Rousseau's advocacy of a return to nature and the simple life: the German "Romantic" philosophers. Reaction of Romanticists against eighteenth century doctrine of social progress artificially achieved by legislation. Their emphasis on "national genius" and the long historical growth of institutions. Their obscurantist tendencies in historical analysis. Fichte and his theory of nationality: Hegel (1770-1831) and his *Philosophy of History*. Burke, Bonald, DeMaistre, Von Haller and the reaction in political philosophy. The platonic tendencies of Emerson.

THE THEOLOGICAL REACTION. Defense of the Christian Epic: Christian apologetics in England: Paley's *View of the Evidences of Christianity*, 1794; Courses in Christian evidences in American colleges: The Bridgewater Treatises (1833-40). John Wesley (1703-1791) and the Methodist religious revival: founding of Baptist Foreign Missionary Society, 1792, and of the Religious Tract Society, 1799. Christian Science.

THE CATHOLIC REVIVAL. The French Catholic reaction after 1814. The Tractarian movement at Oxford: John Henry Newman (1804-1890). Affirmation of the Catholic dogmas of the Immaculate Conception (1854) and of Papal Infallibility (1870): The papal syllabus of 1864. Unsuccessful struggle of Acton.

Dennigsen and the liberal Catholics against the Jesuits and Ultramontaniam. Modernism and its fate.

*Lacey, *John, German Philosophy and Politics, 1915*; Rose, J. H., *Modernity in Modern History, Lectures III, VII*; *McClintock, *The Rise of Modern Religious Ideas, 1911*; Moore, R. C., *History of Christian Thought since Kant (1913)*; Hülsmann, *History of Modern Philosophy, books v. and vi.*; Murray, J. R. Ross, *Encyclopaedia Britannica, 11th ed.*, articles "Kant," "Hegel," "Wissenschafts-Metaphysik," "Wissenschaft," etc.; Lecky, *History of England in the Eighteenth Century, chap. vii.* (The Religious Revival); "Wissenschaft," *Journal*; *Reuss, *History of English Rationalism in the Nineteenth Century, chaps. i and vii.* (statement for our purposes); *Lasker, H. L., *Studies in the Problem of Sovereignty (1917)*, chaps. iii-v; and by the same, *Sovereignty in the Modern State (1919)*, chaps. xviii; Merriam, C. E., *History of the Theory of Sovereignty since Rousseau, chaps. iii-v*; Dennigsen, *Lehrbuch der Ideengeschichte für die Lateinische Formation of dogma*; Sengschon, L., *Political History of Europe, pp. 989 sqq.*; Schaefer, P., *Modernism (1908)*; Pease, M. D., *Modernism (1918)*.

Section 53. Phases of Scientific Progress in the Eighteenth Century.

GENERAL NATURE OF EIGHTEENTH CENTURY SCIENCE. Less minute investigation and experimentation than in the seventeenth century. Fewer notable discoveries. More of a tendency towards generalization, description and dogmatism. Still some very important advances, especially in chemistry, and preparation in the way of classification and organization of data for future scientific progress.

THE MOST SIGNIFICANT SCIENTIFIC ACHIEVEMENTS OF THE CENTURY. (1) *Mathematics*: Maclaurin (1697-1746) and the method of fluxions; the encyclopedic work of Euler (1707-1783). (2) *Physics*: Bernoulli (1700-1782), d'Alembert (1717-1783) and Lagrange (1736-1813) establish mathematical physics; Du Fay (1699-1739), Franklin (1706-1790), Galvani (1737-1798), Volta (1745-1827) and Coulomb (1736-1806) lay the foundation for electrical physics; Haid (1703-1771) invents the achromatic lens; the studies of latent heat by Black (1729-1799) pave the way for Watt's work on the steam engine; Chladni (1756-1827) founds the science of acoustics. (3) *Astronomy*: Lagrange and Laplace (1749-1827) develop celestial mechanics; William Her-

schel (1738-1822) discovers the planet Uranus and greatly adds to the extant astronomical data. (4) *Chemistry*: Priestley (1733-1804) discovers oxygen; Cavendish (1731-1810) discovers hydrogen and the composition of water; Lavoisier (1743-1794) founds quantitative chemistry and establishes chemical nomenclature. (5) *Biology*: trend towards the realm of the naturalist; Buffon (1707-1785) popularizes descriptive biology; Linnaeus (1707-1778) in his "System of Nature" introduces a systematic biological classification; the work of Haller (1707-1777) in physiology; Hunter (1728-1793) and comparative anatomy; Morgagni (1682-1771) and the study of pathology; Jenner (1749-1823) and the theory of vaccination. (6) *Geology*: Moro (1687-1740) comprehends the significance of fossils and the stratification of rock; Werner (1749-1815) establishes stratigraphical geology; Hutton's "Theory of the Earth" (1788) emphasizes method of observation of geological processes and anticipates Lyell. Trend towards applied science, especially in England. Beginnings of technical schools. Relation of eighteenth century science to economic processes.

*Sedgwick and Tyler, op. cit., chaps. xiv-xv; Cajori, F., *History of Mathematics*; and by the same, *History of Physics*; Mendenhall, T. C., *A Century of Electricity* (1892); Forbes, G., *A History of Astronomy* (1909); Thorpe, E., *History of Chemistry*, Vol. 1 (1910); and by the same, *Essays in Historical Chemistry* (1911); Meyer, E. S. C., *A History of Chemistry* (1898); *Loey, W. A., *Biology and Its Makers* (1910); Judd, J. W., *The Coming of Evolution* (1910); Woodward, H. B., *History of Geology* (1911); Geikie, A., *Founders of Geology* (1897).

PART VII. THE CHIEF NOVEL ELEMENTS IN CONTEMPOR-
ANEOUS INTELLECTUAL LIFE.

Section 54. The New Historical Basis of Intellectual
Life: The Doctrine of Evolution.

FORMULATION AND ESTABLISHMENT OF THE EVOLUTIONARY
HYPOTHESIS. Discovery of the great age of the earth; James
Hutton's *Theory of the Earth* (1795); Lyell's *Principles of
Geology* (1830-33). Gradual development of the evolutionary
theory. Lamarck's *Philosophie zoologique* (1809); Chamber's
Vestiges of the Natural History of Creation (1844); the investiga-
tion of Alfred Russell Wallace (1823-1913); Darwin's *Origin of
Species*, 1859. Herbert Spencer (1820-1903) in his *Synthetic
Philosophy* (1860 sqq.) works over philosophy and natural and
social science in the light of the evolutionary hypothesis; great
influence of his writings. Huxley (1825-1895), Haeckel (1834-
1919) and others clarify, defend and popularize the new doctrine.
Subsequent development of the evolutionary doctrine by Mendel,
Weismann, De Vries and others. Weakening of the special
creation theory by other evidence such as archeology and biblical
criticism.

THE SIGNIFICANCE OF THE DOCTRINE OF EVOLUTION FOR INTEL-
LECTUAL HISTORY. Character of the opposition to the evolu-
tionary theory. Popular confusion of "Darwinism" with
"evolution." Revolutionary effects of the new point of view.
Does away with conception of fixed species (Platonic ideas) that
had previously dominated speculation. The genetic method
adopted in all the organic sciences, including the newer social
sciences. Problem of adjusting History to the discoveries of
the past fifty years. Bearing of evolution on the theory of
progress. Organic evolution and social evolution.

Encyclopaedia Britannica, 11th ed., article "*Evolution*"; Osborn, H. F.,
From the Greeks to Darwin; Judd, J. W., *The Coming of Evolution*, 1910;
Darwin's own historical sketch of the evolutionary idea in the later editions
of *The Origin of Species*; *Merz, J. T., *History of European Thought in the
Nineteenth Century*, Vol. II (1903)—chap. ix, on the genetic view of na-
ture, is admirable. *Life and Letters of Charles Darwin*, Vol. I, chap. xiv,

by Huxley, on the reception of the *Origin of Species*, and Vol. II, chaps. i-ii, containing letters and reviews relating to the work. *Fifty Years of Darwinism*, 1909, a collection of essays by eminent scientists; *White, A. D., *Warfare Between Science and Theology*, Vol. I, chaps. i, v; Teggart, F. J., *The Processes of History*; Robinson, J. H., *New History*, chap. iii; Marvin, F. S., *The Century of Hope* (1919), chap. vi; **Evolution in Modern Thought* (Boni and Liveright's Modern Library, 1918); Keller, A. G., *Societal Evolution* (1915).

Section 55. The New Technological Basis of Intellectual Life: Modern Applied Science.

SIGNIFICANT PROGRESS IN SCIENCE IN THE NINETEENTH CENTURY:

(1) *Physics and astronomy*: Count Rumford (1753-1814) discovers the nature of heat; Fraunhofer (1787-1826), Kirchoff (1824-1887), Bunsen (1811-1899) and the spectrum analysis; K. F. Gauss (1777-1855); Ampère (1775-1836), Faraday (1741-1867), Maxwell (1831-1879) and Kelvin (1824-1907) advance the study of electricity; Rumford, Carnot (1796-1832), Mayer (1814-1878) and Joule (1818-1889) discover the principle of the conservation of energy; Helmholtz (1821-1894) and his diverse contributions to physics in the fields of optics, acoustics and the theory of the conservation of energy; Willard Gibbs (1839-1903) and mathematical physics. (2) *Chemistry*: Liebig (1803-1873) and organic chemistry, Dalton (1766-1844) and the atomic theory; Emil Fischer (1852-1919) and modern synthetic chemistry. (3) *Biology* (see above in connection with the doctrine of evolution). (4) *Geology*: the study of glaciation by Agassiz (1807-1873), Penck (1858-) and Chamberlin (1843-); the development of scientific paleontology reinforced by the evolutionary hypothesis.

SOME CHIEF PHASES OF MODERN APPLIED SCIENCE. Watt patents his improved steam engine, 1769; Fulton's steamboat, 1809; Stockton and Darlington railroad opened, 1825; penny post in England, 1839; Morse's electric telegraph, 1844; the Atlantic cable successfully laid, 1866; the telephone, 1876; the cylinder (1812), rotary (1875), and straight line (1889) printing presses; the linotype (1885) and the recent monotype composing machines; the turbine engine (1884); recent development of internal combustion engines; the Diesel marine engine (1897);

great expansion of use of electricity; wireless telegraphy, submarine navigation and aviation all develop in early twentieth century. Application of science to the improvement of man's bodily welfare. Older conception of disease as caused by the devil; introduction of vaccination, 1796; anaesthetics, 1846-7; bacteria named, 1863; development of the germ theory of disease by Pasteur and Koch; aseptic surgery, 1870-80; older conceptions of insanity; exorcism; modern study of insanity and of abnormal psychology; hypnotism and hysteria; psychiatry and Freud's and Jung's study of the unconscious; question of heredity; eugenics or human breeding; the conservation of individual human energy; "conscious muscular coördination" of Alexander; criminology; the alcohol problem; public sanitation; prophylaxis and the question of susceptibility; the field of preventive medicine; the study of fatigue; psychology of efficiency.

CONSTANT INTERPLAY BETWEEN THE STATE OF THE INDUSTRIAL ARTS AND INTELLECTUAL LIFE. During the past two centuries the application of scientific discoveries to daily life has revolutionized our methods of supplying our economic needs, our social and intellectual life, and the whole range of the relations of mankind. The impulse of invention. Iron, coal, and steam, essential to the development of machinery on a large scale; machinery has in turn begotten the modern factory with its vast organized labor, the modern city, and, finally, our well nigh perfect means of rapid human intercommunication. The tremendous increase in the production of wealth and the growing interdependence of nations have opened up a vast range of speculation in regard to the betterment of mankind through the abolition or reduction of poverty, ignorance, disease, and war.

Merz, *History of European Thought in the Nineteenth Century*, Vol. II; *Veblen, Thornstein, *The Instinct of Workmanship* (1914), especially chap. vii, and by the same, *The Theory of Business Enterprise* (1904), especially chaps. ii, ix; *The Vested Interests* (1919), particularly chap. iii; *Sedgwick and Tyler, chaps. xv-xvii; *Marvin, F. S., *The Century of Hope*, chaps. v, x; and edited by the same, *Progress and History*, chap. x; Picard, E., *La Science Moderne* (1914); *The Nineteenth Century, a Review of Progress*; articles reprinted from the "N. Y. Evening Post"; Byrn, E. W., *Progress of Invention in the Nineteenth Century*; Gibbins, *Economic and Industrial Progress of the Century*, 1903; *The Progress of the Century*,

1901, contains excellent reviews of the changes in the nineteenth century; Seligman, E. R. A., *Economic Interpretation of History*. Moore, E. M., *Origin of Matter and Life* (Home University Library); *Mills, *The Realities of Modern Science* (excellent); Cochrane, C. H., *Modern Industrial Progress*, 1904; Articles by C. H. Cochrane on "Composing Machines" and "Printing Presses" in the new *Encyclopedia Americana*; Wells, D. A., *Economic Changes*, 1899; Lankester, E. Ray, *The Kingdom of Man*, chap. ii (chief discoveries, 1881-1906); Trail, *Social England*, Vol. VI, passim; Lecky, *Rise and Influence of Rationalism*, chap. vi (Industrial history of Rationalism). *The Progress of the Century*, articles on advance of medicine; Davenport, C. B., *Eugenics, the Science of Human Improvement by Better Breeding*, 1910; Kellicott, I. E., *Social Direction of Human Evolution: an Outline of the Science of Eugenics*, 1911; Pearson, Karl, *Grammar of Science*, chap. xi; Whetham, *The Family and the Nation*, 1909; *Encyclopaedia Britannica*, 11th edition, articles "Temperance" and "Hypnotism"; Myers, F. W. H., *Human Personality* (2 vols., 1903), for the range of abnormal psychological phenomena; White, A. D., *Warfare of Science and Theology*, chap. xiii "Miracles to Medicine," xiv, xv, and xvi; Prince, Morton, *Dissociation of a Personality*, 1906; Coriot, I. H., *Abnormal Psychology*, 1910; Hitschmann, E., *Freud's Theory of the Neuroses*; Freud, S., *Interpretation of Dreams*, 1913; Lay, W., *Man's Unconscious Conflict*; Gordon, Ernest, *The Anti-Alcoholic Movement in Europe*; Tead, O., *Instincts in Industry* (1918); Alexander, F. M., *Man's Supreme Inheritance*; Goldmark, J. C., *Fatigue and Efficiency* (1913); Lee, F. S., *The Human Machine and Industrial Efficiency* (1918).

Section 56. The New Economic Basis of Intellectual Life: The Industrial Revolution.

THE TECHNOLOGICAL BACKGROUND OF THE INDUSTRIAL REVOLUTION. (For this see the preceeding section).

THE ECONOMIC PHASES AND EFFECTS OF THE INDUSTRIAL REVOLUTION: Man advances from a tool-using to a machine-controlling animal. The rise of the factory system; the concentration and localization of industry; increased division of labor and specialization of industrial processes. The great increase in the volume of capital and in the extent of investments; the separation of capital and labor and the growth of impersonal economic relationships. Problems of capital and labor; unemployment and the labor of women and children; labor organizations. Increased productivity and the expansion of commerce. Industrial processes become dynamic and ever-changing—a complete reversal of the old stability, repetition and isolation.

THE SOCIAL EFFECTS OF THE INDUSTRIAL REVOLUTION: The shifts of population and the changed social landscape; rise of the urban age and of the social problems of the city. Growth of population in the nineteenth century. New social classes and class solidarity; growth of wealth and poverty; social conditions among the new industrial classes. Industrialism and immigration. The "vested interests." Problems of social reform.

THE CULTURAL RESULTS OF THE INDUSTRIAL REVOLUTION: Great progress in the material phases of civilization (much more notable than the progress from 3000 B.C. to 1750 A.D.); vast increase in the material comforts of life (*cf.* the life of a noble in the age of Louis XIV and of modern skilled artisan). Effects of increased contact of East and West. Problem of the alleged "Materialism," "Commercialism" and "Mediocrity" of the present age (sources of this view). Psychological and cultural orientation and standardization correlated with the technology of the new order. Problem of the moral control of the new industrial age. Dynamic nature of modern material culture; difficulty of psychic adjustment to rapidity of economic and social change.

*Robinson and Beard, *Development of Modern Europe*, Vol. II, chap. xviii and xxxi; *Hayes, C. J. H., *Political and Social History of Modern Europe* (1916), Vol. II, chaps. xviii and xxi; *Ogg, F. A., *Economic Development of Modern Europe* (1917), Part II (these three works constitute the best introduction to the subject); *Marvin, F. S., *The Living Past*, chaps. ix-xi; and, edited by the same, *Progress and History*, chap. viii; Mantoux, P., *La révolution industrielle en Angleterre* (1906) (the standard treatise in process of translation); Gay, E. F., *Lectures on the Industrial Revolution* (in preparation); Gibbins, H. B., *Economic and Industrial Progress of the Century* (1903); *Macgregor, D. H., *The Evolution of Industry* (Home University Library); *Hobson, J. A., *The Evolution of Modern Capitalism* (new ed., 1912); Weber, A. F., *The Growth of Cities in the Nineteenth Century* (1899); Hammond, J. L. and B., *The Town Labourer, 1760-1832* (1918); Veblen's books cited in the previous section (particularly *The Theory of Business Enterprise*, chaps. ii and ix) and also his *Theory of the Leisure Class*; *Marvin, F. S., *The Century of Hope*. (Consult the bibliography following chapter xviii of Hayes.)

Section 57. The New Political Basis of Intellectual Life: Nationalism.

DEFINITION AND NATURE OF NATIONALISM: Distinction between a nation, a state and a government. Essentially psychological nature of nationality; "herd-instinct" and patriotism; tendency towards vicarious appropriation of individual achievement.

HISTORICAL BACKGROUND OF THE EVOLUTION OF NATIONALISM: Essentially a process of tracing the expansion of cultural entities and the social centers of emotional fixation—the expansion and rationalization of herd-instinct. The primitive tribal spirit. Origins of states and survivals of tribal psychology; localism in the early city states; ancient patriarchal empires and forceful subjugation of great areas—the universalism of the Roman imperial idea. Provincialism and universalism in the Middle Ages: localism in manorial and town life; universalism in the Roman Catholic Church, the Holy Roman Empire and medieval culture. The Commercial Revolution and the development of the dynastic national state from the ruins of feudalism. Religious and literary impulses to national differentiation in the religious schism of the Reformation and in the rise of the vernacular literatures. The French Revolution and the popularization of democratic sentiment in Europe—The shibboleth of *Fraternity*. The Napoleonic extension of the "French ideas" (reaction of Prussia to the Napoleonic conquest.) The Industrial Revolution, national unification, imperialism and the latest stage in the evolution of nationalism: improved methods of communication and the nationalization of herd-instinct; completion of national unification of Germany and Italy; the repression of submerged nationalities by Pan-Germanism, Pan-Slavism, "Mittel-Europa" projects, Anti-Semitism, etc.; imperialism and national rivalries: armaments and the preparation for "defensive war:" the explosion in 1914.

LEADING ELEMENTS AT THE BASIS OF THE MODERN NATIONALISTIC IDEA: Perpetuation of primitive psychic traits; linguistic chauvinism (Fichte's *Ursprache*, etc.); national arrogance in literature (e. g., Houston Stuart Chamberlain, Nisard, Barrès, Léon Daudet, Rudyard Kipling, et al.); nationalistic historical lit-

erature; vested economic interests (protectionism); nationalistic political philosophy (the conception of absolute sovereignty); patriotic state education; racial misconceptions (Gobineau, et al., the Arian myth); militarism and the military cult.

GROWTH OF INTERNATIONALISM: Modern material and cultural basis for internationalism. Great wars of the past and plans for "perpetual peace." Development of international law and diplomacy. The recent Peace Movement. The Great War and the League of Nations.

*Article "The Historical Development of Nationalism," in the new edition of the *Encyclopedia Americana*; *Robinson, J. H., "What is National Spirit?" in the *Century Magazine*, November, 1916; Perla, L., *What is National Honor* (1918); *Muir, R., *Nationalism and Internationalism*; *Rose, J. H., *Nationality in Modern History* (1915); *Trotter, W., *Instincts of the Herd in Peace and War* (1916); Matthews, S., *Religion and Patriotism* (1918); *Russell, B., *Why Men Fight*; Krehbiel, E. B., *Nationalism, War and Society*; *Hankins, F. H., *Patriotism and Peace* (1919); *Veblen, T., *An Inquiry into the Nature of Peace* (1916); Acton, J. E. D., *History of Freedom*; *Hayes, C. J. H., "The War of the Nations," in *Political Science Quarterly*, 1914; Norman Angell, *The Great Illusion*, Bernhardt, *Germany and the next War*; Kallen, *The Structure of Lasting Peace*, and *The League of Nations*; *Dewey, J., *German Philosophy and Politics*; Novicow, J., *War and Its Alleged Benefits*; *Duggan, S. P. (ed.), *The League of Nations; the Principle and the Practice* (1919); *Marvin, F. S. (ed.), *The Unity of Western Civilization*, chap. xii; and, by the same, *The Century of Hope*, chaps. viii, xi, xiii. (Consult the bibliographies *Encyclopaedia Americana* and in works of Krehbiel and Duggan).

Section 58. The New Social Basis of Intellectual Life: Democracy.

DEFINITION OF DEMOCRACY: Nature of democracy; necessity for a broader view of democracy than merely as a form of government; democracy political, industrial and intellectual; value of a critical attitude.

SOME HISTORICAL ORIGINS OF DEMOCRACY: Fundamental error of Rousseau and others as to a primordial democracy; total absence of democracy in oriental antiquity. Greek conception of democracy presupposed slavery (Aristotle). The Roman *Res publica*. Gradual disappearance of slavery and serfdom. Medieval views on popular sovereignty and representative government (see above section 31). Development of European

kingship. Divine right of kings—defended by James I, Filmer and Bossuet. Position of the Jesuits, Mariana and Suarez. Conception of political liberty develops in England in seventeenth century. The doctrine of the social contract and the right of revolution. England the model of “free” government in the eighteenth century. Parliamentary supremacy. Character of the House of Commons. Rousseau’s *Social Contract* (1761) and his idea of the “general will.” The “people” rarely conceived as the whole adult male population. Original limitation of the franchise in the United States. The French Declaration of the Rights of Man, 1789. Manhood suffrage established in France 1793 and made permanent in 1848. Gradual extension of suffrage in Europe and America. Methods of neutralizing it. The question of votes for women. Mill, *On the Subjection of Women* (1869).

CURRENT PROBLEMS OF DEMOCRACY: Obstacles to democracy: economic privilege and inequality; legal scholasticism: the political “boss” and the machine system; difficulty of adopting democracy to large areas and great populations; absence of vital and effective education in principles and problems of democracy. The referendum, initiative, and recall; compulsory election publicity; municipal home rule. The democratic experiment essentially new and implies a fundamentally new conception of government and the citizen.

*Articles on the history and nature of democracy in the new edition of the *Encyclopedia Americana*; *Scherger, G. L., *The Evolution of Modern Liberty*, 1904; *Lecky, *Rationalism in Europe*, chap. v, on the secularization of politics; Figgis, J. N., *The Divine Right of Kings* (1896); Gooch, G. P., *English Democratic Ideas in the Seventeenth Century* (1898); Dunning, W. A., *A History of Political Theories, from Luther to Montesquieu*; Rose, J. H., *Rise of Democracy* (1897) (relates to England in the 19th century); Dewey, John, *German Philosophy and Politics* (1915); Barker, E., *Political Thought in England* (Spencer to present) (1915) (Home University Library); Sims, N. L., *Ultimate Democracy and Its Making*; Weyl, W., *The New Democracy*; Croly, H., *Progressive Democracy*; Orth, S. P., *Socialism and Democracy in Europe*; Ostrogorski, M., *Democracy and the Organization of Political Parties*; Michels, R., *Political Parties*; Wallas, G., *Human Nature in Politics*; and by the same, *The Great Society*; Lippmann, W., *Preface to Politics*; Cleveland and Schafer (eds.), *Democracy in Reconstruction* (1918); Ogg, F. A., *Social Progress in Contemporary Europe* (1912); *Ross, E. A., *Social Control*; and, by the same, *Sin and Society*.

Section 59. Modern Industrial Democracy and Programs of Social Reform.

GENERAL NATURE OF THE PROBLEM OF SOCIAL REFORM: Psychological problems involved in social reform movements: violent resistance of the group to that criticism of existing institutions which must precede any effective social reform (see above, section 31); the intolerance and intense dogmatism of the average reformer (see Bertrand Russell, *Proposed Roads to Freedom*, Introduction.)

EARLY SOCIAL REFORM PROGRAMS: Plato's *Republic*; the Gracchi and Roman agrarian reform; Apostolic and Patristic notions; the radical religious movements of the Middle Ages in their social and economic aspects; (for Pierre Dubois and Marsiglio of Padua see above, Section 31); the social and economic transformations after the Commercial Revolution and the resulting Utopias: Sir Thomas Moore's *Utopia*, Francis Bacon's *New Atlantis*, Tommaso Campanella's *City of the Sun*, James Harrington's *Oceana*; the Deists, the Philosophes and the rise of the modern critical spirit of reform; the reform aspects of the French Revolution. These earlier movements are interesting, but have little bearing on modern programs which have arisen out of a radically different social order.

MODERN INDUSTRIALISM AND RECENT THEORIES OF SOCIAL REFORMS (See above, sections 55 and 56 for the origins of modern industrial democracy). The distressing evils produced by the Industrial Revolution give rise to extensive proposals for improving the social order; all of these relate to the provisions of a more satisfactory status for the new industrial proletariat; the general complex of servility built up around labor through historical conditions; relatively recent emergence of the modern problems of capital and labor. Economic liberalism and the advocacy of *laissez faire* individualism. Opposition to this new capitalistic individualism: the socialization of economic theory by Sismondi (1773-1842) and the later "socialists of the chair"; Tory socialism and factory reform; Maurice, Kingslev and Christian socialism; Saint-Simon (1760-1825), Fourier (1772-1835), Owen (1771-1858) and Utopian socialism; Louis Blanc



(1813-1882), Proudhon (1809-1865), Weitling (1808-1870), Lasalle (1825-1864), and revolutionary or transitional socialism. Karl Marx (1818-1883) and Friedrich Engels (1820-1895) formulate the Marxian or scientific socialism in the "Communist Manifesto" (1848). The English Fabians (Webb, Wallas, Shaw, Wells, et al.) favor evolutionary and "opportunistic" socialism, which is given great vogue on the Continent through the leadership of Bernstein (1850-). The socialists of all types emphasize the gross injustice, reckless waste, needless suffering, and incredible stupidity of the existing economic and social organization. State socialism and the current attempts to alleviate abuses through legislation. Bakunin (1814-76), Kropotkin (1842-) and modern philosophical anarchism. Trade unionism, syndicalism and the radical labor movement. Gild-socialism proposes a compromise between socialism and syndicalism. Henry George (1839-1897), the "single tax" and the attack upon landed privilege. Capitalistic social reform designed to neutralize the more radical proletarian reforms.

*Article on "Social Reform Programs and Movements" in the new edition of the *Encyclopedia Americana*; *Hayes, *History of Modern Europe*, chap. xxi; *Schapiro, J. S., *Modern and Contemporary European History*, chap. xxiv; *Russell, B., *Proposed Roads to Freedom*, part I (these references are the best introduction to the subject of social reform); Beer, M., *The History of English Socialism*; Guthrie, W. B., *Socialism before the French Revolution*; Peixotto, J. B., *The French Revolution and Modern Socialism*; *Ogg, F. A., *Economic Development of Modern Europe*, Parts III-IV; *Orth, S. P., *Socialism and Democracy in Europe*; *Gide and Rist, *History of Economic Doctrines* (a thorough and scholarly analysis beginning with the Physiocrats); Kirkup, T., *History of Socialism*; Webb, S., *History of Trade Unionism*; Levine, L., *Syndicalism in France*; Reckitt, M. B., *The Meaning of National Gilds*; Marvin, F. S., *The Century of Hope*, chaps. iv, xii and, edited by the same, *The Unity of Western Civilization*, chaps. x, xi, xiv.

Section 60. The Rise of the Newer Social Sciences.

MODERN CONDITIONS GENERALLY FAVORABLE TO THE GROWTH OF THE SOCIAL SCIENCES: The Deists and Philosophes destroy the older theological anthropology and reassert the dignity of man; the growth of criticism and liberalism has made the analysis of social institutions somewhat less dangerous; the general growth

of knowledge has reacted in a stimulating way upon the sciences of society; the great increase in the number, complexity and intensity of social problems has proved a strong incentive to social science; the Darwinian hypothesis has rendered preposterous any conception of a wholly static social system. However, the modern social sciences in our capitalistic order meet much the same resistance from the "vested interests" that theological radicalism encountered in the Middle Ages, and social science has in no way approached the objectivity and progressiveness of present-day natural science.

THE RISE OF THE SOCIAL SCIENCES: Down to the 18th century the social sciences had remained an undifferentiated mass under the name of political philosophy. After 1750 they began to differentiate, political science with Montesquieu, jurisprudence with Blackstone and Bentham, economics with the Physiocrats and Adam Smith, sociology with Ferguson, Condorcet and Saint-Simon, and anthropology with Blumenbach.

DEVELOPMENT OF POLITICAL ECONOMY: Rise of political economy in the 18th century; the French Physiocrats; Turgot; Hume; Adam Smith's *Wealth of Nations* (1776). The English Classical School; Sismondi and social economics. Quetelet and Cournot (circa 1840) establish statistical and mathematical economics. Roscher and the German School emphasize the historical aspects of economic problems. Gide and the French economists devote special attention to social economics and problems of reform. Karl Menger and the Austrian School establish the psychological line of analysis. English and American writers tend towards eclecticism.

DEVELOPMENT OF POLITICAL SCIENCE: Early concern with abstract legalistic analysis (eg. Austin). Bluntschli, Burgess, and others organize the science and provide a system of classification. Maitland introduces the historical point of view. A functional analysis has appeared in the attempts of Ratzenhofer, Duguit, Bentley, and others to analyze the various interests which are involved in political activity. The psychological factors in politics have been recognized by such writers as Bagehot, Wallas, Tarde, and Ross.

THE RISE OF SOCIOLOGY: The many programs of social reform in the early 19th century called forth a general and basic science of society to scrutinize and evaluate these proposals. Sociology studies man primarily in his capacity as a member of a group. The science was named by Comte and systematized by him and by Spencer, Ward, Giddings, and others. Contributions have also been made by many writers from special standpoints, such as the methodological, biological, psychological, historical, environmental and statistical. Particular popularity of sociology in the United States. Excellent aims and small achievements of sociology in practical results.

THE ORIGIN AND GROWTH OF ANTHROPOLOGY: Importance of the ethnographic data brought back to Europe following the period of the discoveries. Early pioneers, such as Blumenbach (1752-1840). While there are many eminent names in special phases of anthropological research, such as the physical, archeological, and philological, anthropology has made its main contribution through its cultural branch, which is concerned chiefly with the study of primitive institutional life. This branch was established primarily by Bastian, Tylor and Morgan, and perfected through the critical work of Boas and his students. The basic importance of anthropology as an introduction to the other social sciences.

MODERN TENDENCIES IN HISTORICAL STUDIES: Down to very recent times history has been almost entirely concerned with dramatic episodes, constitutional development, and political intrigue. In the last half century, however, newer trends have set in which indicate that sooner or later history will devote some attention to explaining the past in a manner which is significant to the present. Some of these modern tendencies are the economic emphasis of Marx and his disciples, the study of institutional history by Coulanges and Maitland, social history promoted by Green and Lamprecht, and intellectual history anticipated by Draper and improved by his more critical successors.

THE NEW PSYCHOLOGY: Recent appearance of comparative (animal) psychology; of social, analytical and functional psychology. Socializing of ethics as well as of psychology.

General nature of the "pragmatic" tendencies in philosophy. Constantly increasing emphasis on the social and historical aspects of the various branches of philosophy. Revolution in fiction during the past half century. Contrast between Thackeray and Dickens, on the one hand, and Bernard Shaw and H. C. Wells on the other.

(See the references in section 31 above; *Haney, L. H., *A History of Economic Thought*; *Gide and Rist, *History of Economic Doctrines*. Davenport, H. J., *Value and Distribution*; Merriam, C. E., *A History of the Theory of Sovereignty since Rousseau*; and by the same, *A History of American Political Theories*; *Laski, H. J., *Studies in the Problem of Sovereignty*; and by the same, *Authority in the Modern State*; Dunning, W. A., *A History of Political Theories*, Vol. III (in preparation); Small, A. W., *General Sociology*; *Bristol, L. M., *Social Adaptation*; Todd, A. J., *Theories of Social Progress*; Haddon, A. C., *History of Anthropology*; (for references on history see those following section 1 above); James, William, *Pragmatism*; Schiller, T. C. S., *Humanism*, 1903; especially chap. ii on "useless" knowledge. Dewey and Tufts, *Ethics*—an excellent example of the tendency to socialize the theory of conduct; *Woodworth, *Dynamic Psychology*; Bernard Shaw's introduction to *Three Plays by Euripides*; Robinson, J. H., *The New History*, chap. iii, "The New Allies of History"; Marvin, F. S., *The Century of Hope*, chap. ix; articles on Economics, Political Science, Sociology, Anthropology and History, in the new *Encyclopaedia Americana*.

Section 61. Problem of Readjusting Education to New Knowledge and New Needs.

SOME OLDER EDUCATIONAL STANDARDS: Educational ideals of the Greeks. The "Liberal arts"; prolonged enthusiasm for rhetoric and oratory; the Scholastic ideal; origin of the "classical" course. Former close association of all education with the Church; many Medieval vestiges in the higher education of today.

PHASES OF MODERN EDUCATIONAL PROGRESS: Modern process of secularization, democratization, and state support. Ability of all classes to read and write promises soon to be general throughout the world; novelty and importance of this. Development of technical and industrial education; higher education of women.

CURRENT EDUCATIONAL PROBLEMS: Question of the fate of older educational system based upon the ideal of the "liberal arts."

the "classics," and confidence in "training the mind" to abstract reasoning. Recommended by its inexpensiveness and its singular adaptation to routine and repetition. Obstacles to readjustment presented by consecrated tradition and by the now questioned confidence in the miscellaneous disciplinary value of the ancient languages and mathematics. Our present departmental system based upon a scientific rather than educational classification of subjects. Grave effects of vested rights in hampering experiment and readjustment. Influence of modern commercialism in the inordinate development of organization and regimentation in our present educational system. Psychological disadvantages of our conventional examination system. As yet our education has not been brought into close relation with prevailing conditions or our ever increasing knowledge.

*Chapin, F. S., *Education and the Mores*; while there are numerous books—for example, Flexner, A., *The American College*, 1908; Wendell, B., *The Mystery of Education*,—and still more numerous articles harshly attacking our higher education and suggesting reforms, few or none of their authors attempt the difficult task of sketching out a fundamental readjustment to meet present conditions. Efforts to bring habits of thinking up to date are made by Wallas, Graham, *The Great Society*; Lippmann, W., *Preface to Politics*, and *Drift and Mastery*; Dewey, John and Evelyn, *The Schools of To-morrow*, 1915; and *Democracy and Education*; Thorndike, E. L., *Education*, 1912, judicious and suggestive; Weeks, A. D., *The Education of To-morrow*, *The adaptation of School Curricula to Economic Democracy*; *Wells, H. G., *The Education of Joan and Peter*; *Veblen, Thorstein, *The Higher Learning*; *Marvin, F. S., *The Century of Hope*, chap. viii.

Section 62. The Conservative Spirit in the Light of Intellectual History.

FUTILITY OF THE APPEAL OF THE CONSERVATIVE TO HUMAN NATURE AS AN OBSTACLE TO PROGRESS: In human history man's nature has probably changed but slightly; nurture (culture) has however produced the most extraordinary and varied effects, which are not uncommonly mistaken for nature. Culture cannot be transmitted hereditarily but can be accumulated through education and modified indefinitely.

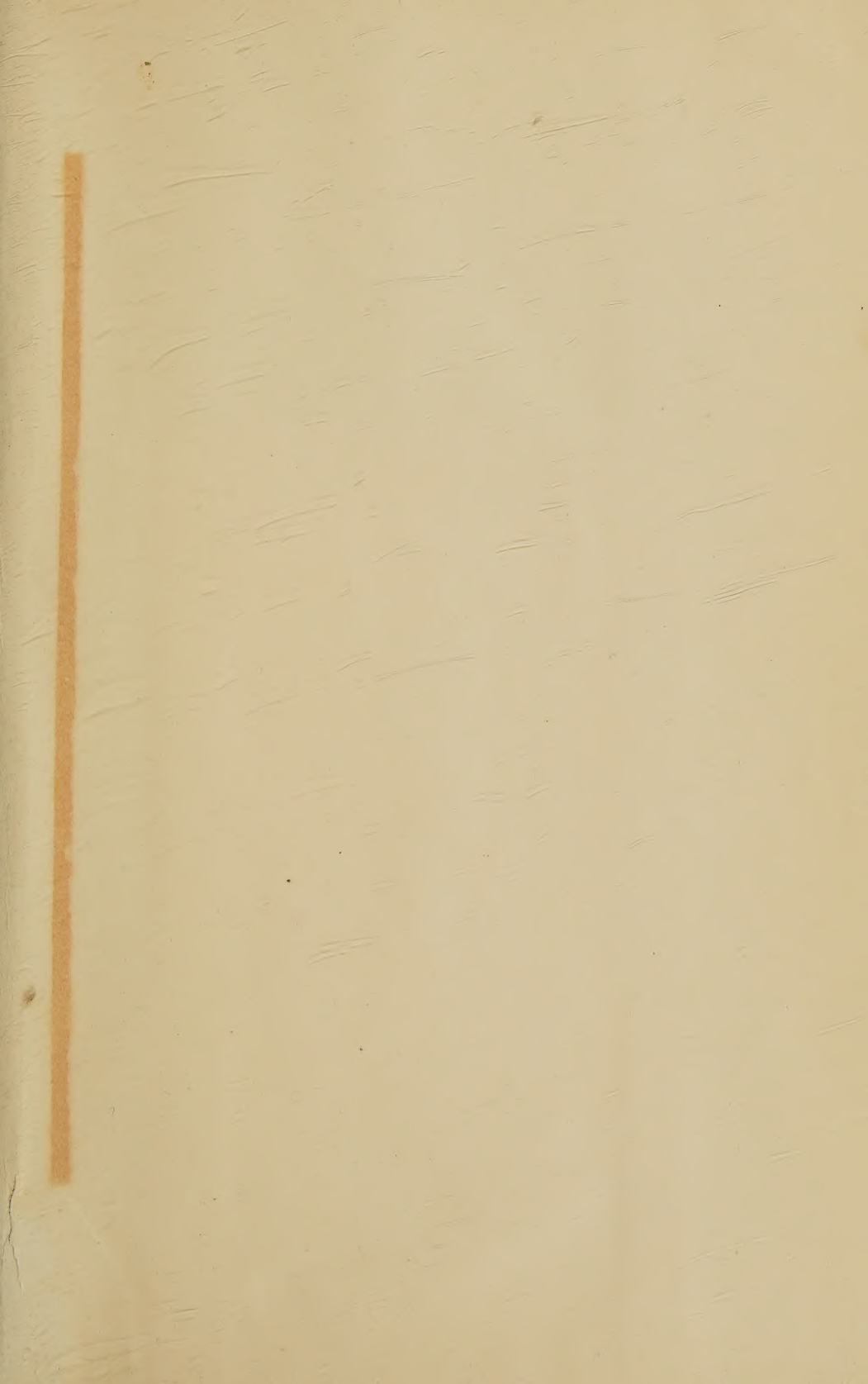
THE SOCIO-PSYCHOLOGICAL FOUNDATIONS OF CONSERVATISM: Primitive natural reverence for the familiar and habitual greatly reenforced by religion and law. Natural conservatism of all professions. Those who suffer most from existing institutions commonly helplessly accept the situation as inevitable. Possession of the conservative; he urges the impossibility of altering "human nature" and warns against the disasters of revolution.

CONSERVATISM IN THE LIGHT OF HISTORY: History would seem to discredit conservatism completely as a working principle in view of the vast achievements of mankind in the recent past and of the possibilities which open before us. Recent emergence of the radical. His early dreams now realized beyond his wildest expectations. Maeterlinck's theory of radicalism.

*Robinson, J. H., *The New History*, chap. viii on "The Conservative Spirit in the Light of History;" Dickinson, G. Lowes, *Justice and Liberty*, 1909; Maeterlinck, essays on "Our Social Duty" and "Our Anxious Morality" in the volume called *Measure of the Hours*; Lankester, E. Ray, *The Kingdom of Man*, chap. i, on "Nature's Insurgent Son"; Wells, H. G., *First and Last Things*; Morley, John, *On Compromise*; Sinclair, Upton, *The Profits of Religion*; Veblen, T., *The Vested Interests*; Edie, L. D. (ed.), *Current Social and Industrial Forces* (1919); Marvin, F. S., *Progress and History*, chap. xii; Cannan, Gilbert, *The Anatomy of Society* (1919).







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